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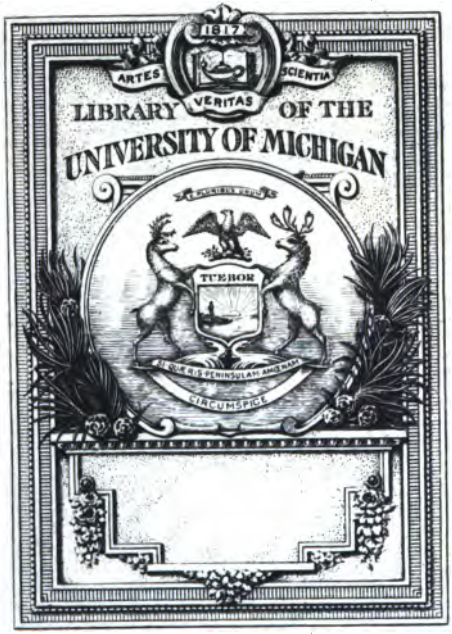
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A NEW

METHOD

OF SOLVING

Adfected Quadratic, and Cubic Equations,

With their Application to

The Solution of Biquadratic Ones.

A

TREATISE

CONTAINING AN

Entire NEW METHOD

OF SOLVING

Adfected Quadratic, and Cubic Equations,

With their Application to

The Solution of Biquadratic Ones;

In an eaſier, and more conciſe Way, than any yet publiſh'd; together with the Demonſtrations of the Methods.

AND

A Set of New TABLES

FOR

Finding the ROOTS of CUBICS.

Invented by the late ingenious Mr. A. THACKER, deceaſed;

But calculated entirely, and in a great Meaſure exemplified, by *W. BROWN*, Teacher of the Mathematicks, at the *Free-School*, in *Cleobury*, *Shropſhire*.

BIRMINGHAM:
Printed by THOMAS ARIS.
MDCCXLVI.

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THE

PREFACE.

THE Buſineſs of reſolving *Adfected Quadratic*, *Cubic*, and *Biquadratic Equations*, by the common Methods, is look'd upon to be very tedious, difficult, and troubleſome; therefore an eaſier and ſhorter Way of unravelling ſuch Sort of *Equations*, would undoubtedly claim the Regard of the *Publick*. This (I hope) is ſufficiently performed in the following *Treatiſe*, which contains ſo general and explicit a Method, as to be applicable to whatever Caſes might happen in each Kind; and yet it is ſo eaſy in Practice, that no Perſon (if but a little acquainted with *Logarithmetical Arithmetic*) will ever be at a Loſs to underſtand it: In ſhort, 'tis an entire new and conciſe Way,

Way of Solving *Adfected Equations* of the Second and Third *Powers*, by the Mediation of which, and the Method given in Dr. SAUNDERSON's *Algebra*, Vol. II. p. 735. (of DES CARTES's Invention) the Fourth becomes ſoluble.

This new Method and Tables, was one of the Diſcoveries of my late ingenious Friend Mr. ANTHONY THACKER, Teacher of the Mathematics at *Birmingham Free-School*, a Perſon well known to the Mathematicians of this Nation for his great Genius, and many ſurprizing Performances, in this Kind of Literature; who engaging himſelf in the Publication of three Volumes of Mathematicks, the firſt of which he printed in 1743, was in *March* 1744, ſeiz'd with a violent Fever, which baffled the Art of the Phyſicians, and hurried him out of this Life, before he had half finiſh'd his ſecond Volume; but had he lived, this Work would have been much better

better done, and placed, as he intended, in his Third.

At his Death many of his Papers coming into my Hands by his Desire, I set about to calculate the Remainder of these Tables, most of which I had done in his Life-time.

Some of the Examples, and the Demonstrations, I collected from his Papers, and have endeavour'd to make every Thing as correct and intelligible as possible; but if thro' Inadvertency any little Mistake shou'd occur to the *Reader*, as no Body has supervis'd this Work after me, I hope he will correct it with his Pen, and candidly pass it by.

In the last Place, I have applied these *Tables* to the Solution of two geometrical Questions, *viz.* the sixth Question proposed in the last Year's *Gentleman's Diary*, and the Seventh *Prob.* of WARD's *Introduction to the Mathematics*, p. 326. of the third Edition, which last is there solv'd by a

Cubic

Cubic Equation; but by means of theſe *Tables* ſuch Queſtions (where the Sum of the Hypothenuſe, added to either Side, or the Difference betwixt the Hypothenuſe and either Side, and the Area of any right-angled Triangle are given) will be ſolv'd by a ſimple *Equation*.

I muſt beg Leave here to acquaint the *Publick*, that I have now ready for the Preſs, a Treatiſe on *Fluxions*; wherein the Doctrine of that ſublime *Art*, will be treated in a plain and familiar Way, which will contain ſeveral new *Theorems* of Mr. THACKER's never before publiſh'd, and the Demonſtrations of thoſe, particular Two, *viz.* for finding the *Area* of the *Hyperbola*, and *Circle's Segment*; which, the * *Author* of a moſt ingenious *Piece* ſays, depend on Principles not yet publickly known, till the *Inventor* ſhall think fit to publiſh them.

* Mr. *Shirtcliffe*.

CLEOBURY, MAR. 8. 1745. W. BROWN.

E R R A T A.

PAGE 3, Line 8, *instead of* Logarithm Tangent of $\frac{y}{x}$, *read* Logarithm Tangent of $\frac{x}{y}$. Page 4, Line 5, *instead of* $2ba-a=c^2$, *read* $2ba-a^2=c^2$. Page 8, Line 13, *instead of* 10851308, *read* 1.0851308. Page 16, Line 21, *instead of* $q\,a^3$, *read* qa^2. Page 19, Line 22, *instead of* their, *read* the.

Againſt	Inſtead of		Read	
	$x^3-bx=2c$	$bx-x^3=2c$	$x^3-bx=c$	$bx-x^3=2c$
1° 50′ 30″	5.8251844		5.8231844	
4 55 0	7.1081937		7.1081037	
23 15 30	9.2875483		9.2895483	
32 33 0	9.9443559	10.7222627	9.9433559	10.7232627
32 33 30	9.9449654	10.7223150	9.9439654	10.7233150
37 35 30		10.8057002		10.8047002
41 53 0		11.0563767		11.0563667

N. B. There has been great Care taken to examine the Tables, which, 'tis preſum'd, will be very correct, when the above few Errors of the Preſs are ſet to Rights.

A NEW

METHOD

Of Solving

Adfected, Quadratic, Cubic, and Biquadratic Equations.

THE READER is here ſuppoſed to underſtand the Nature of *Equations* in general, ſuch as their Generation, the Number of their Affirmative and Negative Roots, and the common Methods of transforming them; which being known, he will be the better prepar'd to comprehend this new Method of their Solution.

CHAP. I.

Of the Reſolution of Quadratic Equations.

THERE are three *Caſes*; firſt, when the Equation to be reſolved is in this Form, $a^2+2ba=c$; ſecondly, when it is in this Form, $a^2-2ba=c$; and thirdly, when it is in this Form, $2ba-a^2=c$.

CASE I.

To find the Value of a *in* $a^2+2ba=c^2$?

Solution.

ASSUME $a^2+2ba=c^2$, and find the Value of $\frac{rc}{b}$ = the Difference of the Logarithm of half the Co-efficient of a, taken from half the Logarithm of the abſolute Number cc, added to Radius, in the Tables of Logarithm Tangents; and let the Tangent of half the Number of Degrees correſponding thereto, be expreſs'd by $\frac{x}{y}$; then will $rc \times \frac{x}{y} = \frac{rc}{\frac{y}{x}}$ which is the Logarithm Co-tangent of $\frac{x}{y}$ ſubtracted from the Logarithm of rc be = the Value of a.

Example.

Let there be given $a^2+7a=144$, or $a^2+2ba=c^2$ to find a? Here half the Logarithm of 144 + Radius is rc=10.+1.0791812; and the Logarithm of half 7 is b=0.544068o and 11.0791812 Minus 0.544068o is = 10.5351132 = $\frac{rc}{b}$ which found in the Tables of Logarithm Tangents is 73°: 44′: 23″: 15‴, the Logarithm Co-tangent of whoſe half is 10.1249390, which taken from 11.0791812, leaves 0.9542422 = Logarithm of a, ∴ a=9. Q. E. I.

CASE

CASE II.

To find the Value of a *in* $a^2-2ba=c$?

SOLUTION.

PUT $a^2-2ba=c^2$, and find as before in Case I. the Value of $\frac{rc}{b}$ in the Tables of Tangents, and let the Co-tangent of half the Number of Degrees oppofite thereto be $\frac{y}{x}$, then will $rc\times\frac{y}{x}$ which is = Logarithm Tangent of $\frac{y}{x}$ fubtracted from the Logarithm of rc be $=a$.

EXAMPLE.

Given $a^2-7a=120$, or $a^2-2ba=c^2$. Quere a? Here the Logarithm of half 7 is $=0.5440680$, which fubtracted from half the Logarithm of 120 + Radius $=11.0395906$, leaves 10.4955226; this anfwers in the Tables of Tangents to $72°:16':51'':40''$, the Tangent of half which is 9.8634991, and this taken from 11.0395906, gives 1.1760915 = Logarithm of a $\therefore a=15$. Q. E. I.

CASE III.

To find the Value of a *in* $2ba-a^2=c$?

SOLUTION.

HERE put $2ba-a^2=c^2$, and find the Value of $\frac{rc}{b}$ in the Tables of Sines, and let the Co-

tangent of half the Number of Degrees correſpondent be called $\frac{y}{x}$; then will $rc \times \frac{y}{x}$, as in the laſt Caſe, be $=a$.

Example.

Given $25a - a^2 = 136$, or $2ba - a = c^2$, Quere the Value of a? Now the Logarithm of Half 25 is $=1.0969100$ which ſubtracted from half the Logarithm of 136 + Radius $= 11.0667694$, leaves 9.9698594; this anſwers in the Tables of Sines to $68° : 53' : 59'' : 12'''$ or $111° : 6' : 0'' : 48'''$; the Tangents of whoſe Halves are 9.8363202 and 10.1636798, and each of theſe ſubtracted from 11.0667694, gives 1.2304492 and 0.9030896 $=$Logarithms of a, $\therefore a = 17$ or 8. Q. E. I.

Corollary.

By a juſt Obſervation of the Premiſes, may be deduc'd this ſhort Rule for ſolving all Quadratic Equations.

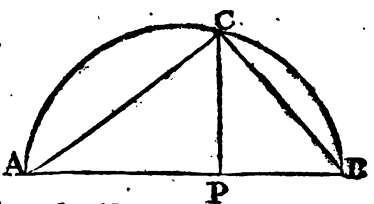
From half the Logarithm of c + Radius $(=L)$ ſubtract the Logarithm of b, find the Difference in the Tables of Logarithm Tangents, if the given Equation be of the 1ſt or 2d Form; or in the Tables of Sines, if of the 3d, then ſubtract, if the Equation be of the 2d or 3d Form, the Logarithm Tangent of half the correſponding Number of Degrees (or the Co-tangent of half the Degrees, if it be of the 1ſt) from L above, and the Remainder will be the Logarithm of a ſought. See the Forms, p. 1.

Having found the one Value of a, the other is eaſily obtain'd from a due Conſideration of the Geneſis of Quadratics, whereby it appears that the Sum of both the Roots muſt ever be $=$ to $2b$:

For

For Inſtance, the two affirmative Values of a in the 3d *Caſe*, are 17 and 8, whoſe Sum is $25 = 2b$ ∴ by having the one of them, the other is got by Subtraction. But then this Sum of them in the 1ſt and 2d *Caſe*, will always be affected with a contrary Sign to $2b$ ∴ by ſubtracting the affirmative found Value in either of theſe Caſes from $2b$ with a contrary Sign to what is in the given Equation, the Remainder will be the negative Value required. Thus in *Caſe* 2d the affirmative Value of a is found $= 15$, and $2b$ is $= -7$ ∴ $+7-15$ is $= -8$ the negative One. And ſo in *Caſe* 1. the affirmative Root of a is $= 9$, and $2b$ is $= +7$ ∴ $-7-9 = -16$ the negative One.

The Demonſtration of the foregoing Caſes.



IN the right-angled Triangle ACB, right-angled at C, let the Perpendicular CP be drawn from the Right-Angle upon the Hypothenuſe AB: Then put $c = CP$, $2b =$ the Difference betwixt AP and PB, and let PB be made $=$ to a, then *per* ſimilar Triangles $AP : PC :: PC : PB$; that is, $2b+a : c :: c : a$ ∴ $a^2+2ba=c^2$. But if x and y be put for the Sine and Coſine of the Angle BAC or PCB, and Radius $= 1$, then *per* Trigonometry $x : c :: y : \frac{cy}{x} = AP$, and alſo $y : c :: x : \frac{cx}{y} = PB$, but $PA-PB = 2b = \frac{cy}{x} - \frac{cx}{y}$ ∴ $cy^2-cx^2=2byx$, and $\frac{rc}{b} = \frac{2ryx}{y^2-x^2}$ (r being $=$ Radius) is the Tangent of an Arch double to that of the Angle BAC or PCB, which being

being known, then (as above) $PB = cx\frac{x}{y}$, or rather $rcx\frac{x}{y} = a$, which is the *Demonſtration* to *Caſe* 1.

Again, if a be put to expreſs the Segment AP, then by Computation $a^2 - 2ba = c^2$; but $\frac{rc}{b}$ is ſtill $= \frac{2ryx}{y^2 - x^2}$, which being known, $AP = rcx\frac{y}{x} = a$, which demonſtrates the 2d *Caſe*.

Laſtly, If b be put to expreſs the whole Baſe AB, and a repreſents either AP or PB, then by Calculation $ba - a^2 = c^2$. And ſince $AP = \frac{cv}{x}$, and $PB = \frac{cx}{y}$, hence $\frac{cy}{x} + \frac{cx}{y} = b = AB$, $\therefore cy^2 + cx^2 = byx$, or (becauſe $y^2 + x^2 = 1$) it is $c = byx$ or $rc = rbyx$, and $\frac{2rc}{b} = 2ryx$ the Sine of an Arch, which is double to that of the Angle BAC or PCB, which being known $rcx\frac{y}{x}$ will be $= PA$ or PB, which is the Demonſtration to *Caſe* 3d. And ſince the Sine of an Arch, and that of its Supplement are the ſame, this *Caſe* will be ambiguous.

CHAP. II.

Of the Reſolution of Cubic Equations.

CUBICS are moſt eaſily ſolved by the help of the new *Tables* hereto annex'd, whoſe Theory is given further on, and whoſe Practice will be ſufficiently ſhewn in the following *Caſes*.

CASE

CASE I.

To find the Value of a *in* $a^3-ba=c$?

Solution.

ASSUME $a^3-ba=2c$, and find the Value of $\frac{rb\sqrt{b}}{c}$ = Logarithm of c ſubtracted from half the Logarithm of b, added to the Logarithm of b, Plus Radius in the Tables under the Title of $x^3-bx=2c$, and let the Tangent of the oppoſite Number of Degrees be called t, then will $\frac{r\sqrt{b}}{t}$ = Logarithm Tangent of t, taken from half the Logarithm of b Plus Radius be equal the Value of a.

Example.

Given $a^3-148a=672$, or $a^3-ba=2c$, to find a? Here $c=336$, and $b=148$, whoſe Logarithms are 2.5263393 and 2.1702617, half of which laſt is 1.0851308 $=\sqrt{b}$, $\because$ $rb=12.1702617$ and 12.1702617 Plus 1.0851308 Minus 2.5263393 is $=10.7290532=\frac{rb\sqrt{t}}{c}$, to which anſwers 40°, 59′ the next leaſt in the Tables of $x^3-bx=2c$, but to find it more exact, proceed thus; divide half the Difference betwixt the Number to be ſought for in the Tables and the next leaſt to it, = here to 4347.5 by the Difference betwixt the Numbers correſponding to 40° : 59′ and 40° : 59′ : 30″ = 11691, and the Quotient .3718 is the Decimal of a Minute = 22″ : 20‴ over and above to be added to

to 4C° : 59′ (or ſubtracted from the greater oppoſite Degrees when the Tabular Numbers decreaſe); then will the Logarithm Tangent of which be 9.9390028, which taken from 11.0851308 $= r\sqrt{b}$ leaves 1.4612280 $= \frac{r\sqrt{b}}{t}$ = Logarithm of a, $\therefore a =$ 14, one of its Values, which is Affirmative.

But in order to find the Negative Values of a the Number 10.7290532 before found under $x^3 - bx = 2c$, muſt now be ſought for under $bx - x^3 = 2c$ in the Tables, which gives 26° : 15′ : 8″ : 37‴, and alſo 33° : 19′ : 43″ : 30‴, whoſe Tangents are 9.6930205, and 9.8179590, each of which added to 10851308 Minus Radius $= \frac{t\sqrt{b}}{r}$ (ſee the following *Caſe*) will exhibit the Logarithms of 0.7781513, and 0.9030898, $= 6$, and 8, for the two Negative Values of a, $\therefore a = +14, -8$, or -6, for $a - 14 \times a + 8 \times a + 0 = a^3 - 148a - 672 = 0$, the given *Equation*. Q. E. I.

I have been the longer about this firſt *Caſe's Example*, in order to make every Thing as plain as poſſible to the *Reader*.

CASE II.

To find the Value of a *in* $ba - a^3 = c$?

SOLUTION.

PUT $ba - a^3 = 2c$, and finding the Value of $\frac{rb\sqrt{b}}{c}$ in the Tables under the Title of $bx - x^3 = 2c$, we get the Number of Degrees correſponding

responding whose Tangent call t, then will $\frac{t\sqrt{b}}{r}$ be = the Value of a.

EXAMPLE.

Given $364a - a^3 = 2640$, or $ba - a^3 = 2c$. Quere a? Here the Value of $\frac{rb\sqrt{b}}{c} = \frac{r264\sqrt{364}}{1320} =$ 10.7210782, is to be sought for in the Tables of $bx - x^3 = 2c$, against which is found 27° : 39′ : 39″ : 20‴, and also 32° : 10′ : 07″ : 20‴, whose Logarithm Tangents call t, and T, then will the Logarithm of $\frac{t\sqrt{364}}{r} = 0.9999999$ and $\frac{T\sqrt{364}}{r}$ = 1.079181 3; which answer in the Tables of Logarithms to 10, and 12, be the two Affirmative Values of a. And if the above Number 10.7210782, be found in the Tables of $x^3 - bx = 2c$, we shall find it = 40° : 55′ : 56″ : 39‴, whose Tangent call t, then as in Case I. will the Logarithm of $\frac{r\sqrt{b}}{t} = \frac{r\sqrt{364}}{t} = 1.3424227$, which answers in the Tables of Logarithms to 22, be the Negative Value of a, $\therefore a = +10, +12$, or -22 for $a-10 \times a-12 \times a+22 = a^3 - 364a + 2640 = o$, the given *Equation*. Q. E. I.

CASE III.

To find the Value of a *in* $a^3 + ba^2 = c$?

SOLUTION.

ASSUME $a^3 + ba^2 = 4c^2$, find the Value of $\frac{rb\sqrt{b}}{c}$

in the Tables under $x^3 - bx = 2c$, as in *Case* I. and call the Tangent of the correſpondent Number of Degrees t, then will a be $= \frac{2ct}{r\sqrt{b}}$.

EXAMPLE.

Given $a^3 + 9a^2 = 1900$, or $a^3 + ba^2 = 4c^3$, to find a? Here $\frac{rb\sqrt{b}}{c} = \frac{r9\sqrt{9}}{\sqrt{475}}$ is $= 10.0930169$, which anſwers in the Tables of $x^3 - bx = 2c$, to $34^a : 32^l : 15^f : 18^{iv}$, whoſe Logarithm Tangent is 9.8377445, then will $\frac{2ct}{r\sqrt{b}} = 9.8377445 + 1.3383468 + 0.3010300 - 10.4771212 = 1.0000001$ be $=$ the Logarithm of a, $\therefore a$ is $= 10$, the only Affirmative, and poſſible Value of a; ſince 10.0930169 is not to be found in the Tables of $bx - x^3 = 2c$. Q. E. I.

CASE IV.

To find the Value of a *in* $ba^2 - a^3 = c$?

SOLUTION.

MAKE $ba^2 - a^3 = 4c^3$, find the Value of $\frac{rb\sqrt{b}}{c}$ in the Tables under $bx - x^3 = 2c$, as in *Case* II. and call the Tangent of the correſpondent Number of Degrees t, then will a be $= \frac{2cr}{t\sqrt{b}}$.

EXAM-

Example.

Given $20a^2 - a^3 = 1152$, or $ba^2 - a^3 = 4c^2$ to find a? Here $\frac{rb\sqrt{b}}{c} = \frac{r20\sqrt{20}}{\sqrt{288}}$ is $= 10.7218488$ which answers in the Tables of $bx - x^3 = 2c$ to $27° : 29' : 38'' : 6'''$, and also $32° : 18' : 41'' : 32'''$ whose Logarithm Tangents call t, and T, then will the Logarithm of $\frac{2r\sqrt{288}}{t\sqrt{20}} = 1.1638471$, and $\frac{2r\sqrt{288}}{T\sqrt{20}} = 1.0791812$ which answer in the Tables of Logarithms to 14.583, and 12, be the two affirmative Values of a. And if 10.7218488 be sought for in the Tables under $x^3 - bx = 2c$, we shall find it $= 40° : 56' : 16'' : 33'''$, whose Tangent call t, then as in *Case* III. will $\frac{2t\sqrt{288}}{r\sqrt{20}}$ be $= 0.8184239$, which in the Logarithm Tables is $= 6.583$ the negative Value of a, $\because a = +14.583, +12$, or -6.583 for $\overline{a - 14.583} \times \overline{a - 12} \times \overline{a + 6.583}$ is $= a^3 - 20a^2 + 1152 = e$, the given *Equation*. Q. E. I.

CASE V.

To find the Value of a *in* $a^3 + ba = c$?

Solution.

PUT $a^3 + 3ba = 2c$, and find the Value of z in $z^6 - 2cz^3 = b^3$, by the foregoing new Method of solving *Quadratic Equations*, then will $z - \frac{b}{z}$ be $= a$.

EXAMPLE.

Given $a^3+627a=2572$, or $a^3+3ba=2c$, Quere a? Subſtitute the Value of $b=209$, and of $c=1286$ in $z^6-2cz^3=b^3$, then (by *Caſe* II. of *Quadratics*) half the Logarithm of b^3+Radius is $=13.4802194$, from which ſubtract the Logarithm of $c=3.1092410$, and there remains 10.3709784, which anſwers in the Tables of Logarithm Tangents to 66°: 56′: 40″, the Tangent of whoſe Half is 9.8204170, and this taken from 13.4802194 leaves $3.6598024 =$ the Logarithm of z^3 $\therefore$ $z=16.593$ &c. and $\therefore$ $\frac{b}{z} =$ 12.593 &c. Hence $z-\frac{b}{z}=a=4$. The other Values of a are found by the common Method of Diviſion, &c. to be impoſſible. Q. E. I.

CASE VI.

To find the Value of a *in* $a^3+ba^2+ga=c$ *univerſally?*

SOLUTION.

MAKE $a^3+3ba^2+ga=c$, find the Value of z in $z^3 \overset{-3b^2z}{+gz} = c \overset{+gb}{-2b^3}$ and then will $z-b$ be equal to a.

EXAMPLE I.

Given $a^3+3a^2+2a=2184$, or $a^3+3ba^2+ga=c$, to find a? Here by ſubſtituting $b=1$, and $g=2$, in $z^3 \overset{-3b^2}{+g} z=c+gb-2b^3$, we get $z^3-z=2184$, from whence (by *Caſe* I. of *Cubics*) z will be found $=13$. Hence

Hence $z-b$ is $=a=12$, the only Affirmative, and poſſible Value of a. Q. E. I.

Example II.

Suppoſe $a^3-6a^2+2a=888$, or $a^3-3ba^2+ga=c$, Quere a? Here becauſe b is Negative, therefore every Term wherein there is an odd Power of b muſt be changed in $z^{3}{}^{-3b^2}_{+g}z=c+gb-2b^3$. And becauſe b is $=2$, and $g=2$: Hence $z^{3}{}^{-12}_{+2}z=888-4+16$ is $z^3-10z=900$, from which by *Caſe* I. of *Cubics*, z will be found $=10$, and here 'twill be $z+b=12$, the only Affirmative, and poſſible Value of a. Q. E. I.

Example III.

If $a^3-9a^2-4a=4320$, Quere a? Here $b=3$, and $g=4$ are both Negative: Hence $z^{3}{}^{-27}_{-4}z=4320+12+54$ is $z_3-31z=4386$, which being ſolved by *Caſe* I. of *Cubics*, gives $z=17$; and $z+b=20$, the (only poſſible) Value of a, which was requir'd.

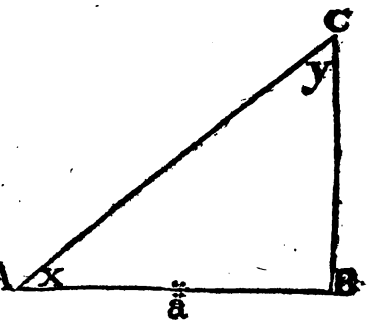
Example IV.

Given $-a^3+330a^2-1600a=8125$, to find a? Here by Tranſpoſition $a^3-330a^2+1600a$ is $=-8125$, where b and c are both Negative: Hence by Subſtitution $z^{3}{}^{-36300}_{+1600}z=-8125-176000+2662000$ becomes $z^3-34700z=2477875$, which being ſolv'd by our Method, z will be found $=215$, and $\therefore z+b$ is $=325$; but z will be alſo found $=101.91$, $\therefore b-z$ is $=8.09$ the two Affirmative Values of a. Laſtly, z will be found too $=113.09$, $\therefore z-b$ is $=3.09$ the Negative Value. Q. E. I.

Having

Having now sufficiently exemplified these new Tables in the Solution of the preceding *Cases*, we come next to their Demonstration.

The Demonstration of the foregoing CASES.



IN the Triangle *ABC*, rightangled at *B*, let the Difference betwixt *AC* and *BC* be called d; the double Area of the Triangle *ABC*, A; and *AB* be $= a$, then by a Process in Algebra we get $a^2 - d^2 a = 2dA$; but if the Sine and Cosine of the Angle *BAC* be expressed by x and y respectively, Radius being $= 1$; we have (*per Trigonometry*) $y : a :: x : \frac{ax}{y} = BC$, $\therefore \frac{aax}{y} = A$; again, $y : a :: 1 : \frac{a}{y} = AC$; hence $\frac{a}{y} - \frac{ax}{y} = d$, $\therefore a = d \times \frac{y}{1-x}$ and $a^2 = d^2 \times \left[\frac{y}{1-x}\right]^2$ which put for a^2 above makes $d^2 \times \left[\frac{y}{1-x}\right]^2 \times \frac{x}{y} = A$, $\therefore \left[\frac{y}{1-x}\right]^2 \times \frac{x}{y} = \frac{A}{d^2}$ = to the Square of the Cotangent of half the Angle *ACB*, drawn into the Cotangent of the whole Angle *ACB*.

Again, If s be put for the Sum of *AC* and *CB*; then by a like Process we get $s^2 a - a^3 = 2sA$; $a = s \times \frac{y}{1+x} = s \times \frac{1-x}{y}$ and $\frac{A}{s^2} = \left[\frac{1-x}{y}\right]^2 \times \frac{x}{y}$ = to the Cotangent of the Angle *ACB*, divided by the Square of the Cotangent of its half.

COROL-

Corollary I.

Hence the Demonſtration of the Calculus of the Tables: For if we take the Angle $ACB = 10°$, then will the Logarithm Tangent of $90° - 10° = 80°$ being made more, and leſs, by the Double of the Logarithm Tangent of 40° give the Value of $\left|\frac{y}{1-x}\right|^2 \times \frac{x}{y} = \frac{A}{d^2}$; and $\left|\frac{1-x}{y}\right|^2 \times \frac{x}{y} = \frac{A}{s^2}$; the former of which is 10.6013082 placed under $x^3 - bx = 2c$; and the latter is 10.9060542 placed under $bx - x^3 = 2c$; againſt 40° in our Tables, and ſo for any other Degree, &c. Q. E. D.

Corollary II.

Hence the Demonſtration of the 1ſt *Caſe* of *Cubics*, *viz.* $a^3 - ba = 2c$, or $a^3 - d^2a = 2dA$, by the Help of theſe Tables may be deduc'd; for $d^2 = b$, and $2dA = 2c$ ∴ $d = \sqrt{b}$, $c = \sqrt{b} \times A$, and $A = \frac{c}{\sqrt{b}}$, but before $\frac{A}{d^2}$ was found $= \left|\frac{y}{1-x}\right|^2 \times \frac{x}{y}$ = here to $\frac{c}{b\sqrt{b}}$, or rather $\left|\frac{1-x}{y}\right|^2 \times \frac{ry}{x} = \frac{rb\sqrt{b}}{c}$ (ſuppoſing r = Radius) being more ready in Practice, is = to the Degrees in the Tables under $x^3 - bx = 2c$, whoſe Tangent let be t, then becauſe 'twas before prov'd that $d \times \frac{y}{1-x}$ was $= a$, and here d being $= \sqrt{b}$, and $\frac{y}{1-x} = \frac{y}{r-x}$ is $= \frac{r+x}{y} =$ the Co-tangent of half the Angle BCA = alſo to $\frac{r}{t}$ ∴ a is $= \frac{r\sqrt{b}}{t}$. Q. E. D.

Corollary III.

Hence alſo the Demonſtration of the 2d *Caſe* of *Cubics*, *viz.* $ba-a^3=2c$ or $s^2a-a^3=2sA$, for by proceeding, as in laſt *Corollary*, we get $s=\sqrt{b}$, and $\frac{A}{s}=\frac{c}{b\sqrt{b}}=\sqrt{\frac{1-x}{y}}^2\times\frac{x}{y}$, or rather $\sqrt{\frac{y}{1-x}}^2\times\frac{ry}{x}=\frac{rb\sqrt{b}}{c}$ is = to the Degrees in the Tables of $bx-x^3=2c$, whoſe Tangent call t, then becauſe 'twas before prov'd that $sx\frac{y}{r+x}$ was $=a$, and here s being $=\sqrt{b}$, and $\frac{y}{r+x}=\frac{t}{r}$ $\therefore a$ is $=\frac{t\sqrt{b}}{r}$. Q. E. D.

The Demonſtrations of the other *Caſes* are eaſily prov'd from what has already been deliver'd, except that of the 5th *Caſe*, which is deduc'd from the Rule commonly aſcrib'd to Cardan.

Chap. III.

Of the Reſolution of Biquadratic Equations.

All Sorts of Biquadratic Equations may be ſolv'd by the Intervention of Cubic ones, thus:

Rule.

Let the Equation propos'd to find the Values of a, be $a^4+qa^3+ra+s=0$, (whoſe ſecond Term is taken away) find firſt the Root of this Cubic Equation $x^3+2qx^2+\frac{q^2}{-4s}x-r^2=0$ by the foregoing new Method, then making $\sqrt{x}=e$, $\frac{q+e^2-\frac{r}{e}}{2}=c$, and

$q+$

$\frac{q+e^2+\frac{r}{e}}{2} = d$; and the original Equation will be reſolv'd into theſe two Quadratics, *viz.* $a^2+ea+c=0$, and $a^2-ea+d=0$, each of which being ſolved by the new Method of Quadratics, will exhibit the Value of a requir'd.

Demonstration.

Let the two Quadratic Equations $a^2+ea+c=0$, and $a^2-ea+d=0$, whoſe middle Terms $+ea$, and $-ea$, are equal, and contrary, be multiplied together, and there will reſult a Biquadratic Equation, whoſe ſecond Term is wanting; for they will produce

$$\begin{matrix} & +c & +ed & \\ a^4 & +d\,a^2 & & a+cd=0, \\ & -e^2 & -ec & \end{matrix}$$

which put = to the given Equation $a^4+qa^2+ra+s=0$; from whence we have $c+d-e^2=q$, $ed-ec=r$, and $cd=s$, $\therefore d+c=q+e^2$, and $d-c=\frac{r}{e}$; and by adding and ſubtracting theſe, and taking the half of each, we get $c=\frac{q+e^2-\frac{r}{e}}{2}$ and $d=\frac{q+e^2+\frac{r}{e}}{2}$: Multiply theſe two together, and we have $\frac{q^2+2qe^2+e^4-\frac{r^2}{e^2}}{4}=dc$, which is $=s$, then by Reduction we get $e^6+2qe^4+\frac{+q^2}{-4s}e-r^2=0$: Put $x=e^2$, and the Bicubic will become $x^3+2qx^2\frac{+q^2}{-4s}x-r^2=0$, from whence the Rule is evident. Q. E. D.

Example I.

Given $-a^4+27a^2+14a=120$, to find a? By transposing the Equation, 'tis $a^4-27a^2-14a+120=0$, or $a^4+qa^2+ra+s=0$ $\therefore$ $q=-27$, $r=-14$, and $s=+120$, and by substituting these Values in $x^3+2qx^2+\frac{q^2}{-45}x-r^2=0$, we have $x^3-54x^2+\frac{729}{-480}x-196=0=x^3-54x^2+749x-196=0$, which Equation being solv'd by *Case* VI. of *Cubics*, gives $x=1$, 4, or 49, $\therefore$ e is $=1$, 2, or 7, either of which Numbers being put for e, in $\frac{q+e^2-\frac{r}{e}}{2}$ and $\frac{q+e^2+\frac{r}{e}}{2}$ will give c, and d; for which put their Equals in $a^2+ea+c=0$, and $a^2-ea+d=0$, and find the Affirmative and Negative Roots of a in each of these Quantities, (according to the foregoing Methods) and those shall be the Values of a in the original Equation: Thus if e be taken $=1$, then is $c=-6$, and $d=-20$ $\therefore$ $a^2+a=6$ and $a^2-a=20$, which two Equations being solv'd, the former gives $a=+2$, or -3, and the latter $a=+5$, or -4, which are the true Roots of the given Equation for $\overline{a-2}\times\overline{a+3}\times\overline{a-5}\times\overline{a+4}$ is $=a^4-27a^2-14a+120=0$. Q. E. I.

A Remark.

Here by the Bye, it may be observed, that in any Equation, whose second Term is wanting, all the Affirmative Roots taken together, are equal to all the Negative ones taken together; as in the last Example $+2$, $+5$, is $=-3$, -4. And in the first *Case* of *Cubics*, the Roots of a in $a^3-148a=672$, were found $=+14$, -8, and -6, where $+14=-8,-6$. And so in *Case* II. where $364a-a^3=2640a$ was found $=+10$, $+12$, and -22; all which prove the Truth of this Remark.

Ex-

Example II.

Given $a^4-60a^3+1650a^2-22500a+115344=0$, Quere a? In order to take away the second Term, substitute $y+15$ instead of a in the Equation, and it will be converted into $y^4+300y^2-2781=0$, which is a Quadratick Equation; $\therefore$ being solv'd by *Case* I. *p.* 2. we get $y^2=9$, (or -309 impossible;) and consequently a, one of it's requir'd Values, is 18, because $a=y+15$; now let the given Equation be divided by $a-18$, and we have $a^3-42a^2+894a-6408=0$, from which by *Case* VI. of Cubics, a will be found $=12$, the other Values being found to be impossible.

But if the Solution of the Quadratic Equation $y^4+300y^2=2781$ be justly consider'd, it will evidently appear, that y may be as well -3, as $+3$, since either of them involv'd will form the Equation, $\therefore$ a will then be found either $3+15$, or $+15-3$, $=18$, or 12, at once.

But let $y^4+300y^2-2781=0$, be an Equation to be resolv'd by the general Rule, where q is $=300$, $r=0$, and $s=-2781$: Here their Cubic Equation, first to be solv'd, is $x^3+600x^2+101124x-r^2=0$, or because $r^2=0$, 'twill be $x^3+600x^2+101124x=0$; now as x is found in every one of the Terms, it is an infallible Rule that one of its Values is $=0$, $\therefore$ dividing the Equation by x, to discover the other Roots, we have this impossible Equation $x^2+600x+101124=0$, and $\therefore$ there is but one Value of x or ee, which is $=0$: Seeing $ee=q$, the Quantities e and d will then be $\frac{q-\frac{r}{e}}{2}$ and $\frac{q+\frac{r}{e}}{2}$, and the Difficulty now lies in finding the Value of $\frac{r}{e}$, whose Terms are both equal to nothing; for tho' r and e

may be equal to nothing, when consider'd in Conjunction with finite Quantities, yet, when compar'd one with another, they may be in any Ratio. Therefore to forward our Enquiry, says Dr. *Saunderson*, suppose the Quantities r and e to be finite, and to pass in a finite Time from something thro' all Degrees of Magnitude into nothing, so as to vanish both together, and so discover, if we can, the ultimate Magnitude of the Fraction $\frac{r}{e}$; to this End, let us resume the Equation $x^3+600x^2+101124x-rr=0$, that expresses the Relation of r to e, or rather of r to x in general, whether it be finite or infinitely small, where, by x must be understood the least Root of it: Now by this Equation it is plain that when r is something, or nothing, x will be so too; $\therefore$ they will both vanish together: It is plain also, that when x is nothing, or rather in its last State of Existence, the first Term x^3 will be infinitely less than the second $600x^2$, because x which is nothing is infinitely less than 600, which is something: For the same Reason $600x^2$ will be infinitely less than $101124x$; $\therefore$ the two last Terms of the Equation will give the last Relation of r to x as effectually as the whole: Reject then the two first Terms, and we shall have $101124x-rr=0$, $\therefore x=\frac{rr}{101124}$, and $\sqrt{x}$ or $e=\frac{r}{318}$; thus then the last Ratio of r to e, is that of r to $\frac{r}{318}$, or of 318 to 1, and the last Magnitude of $\frac{r}{e}$ is $\frac{318}{1}$ or 318: This being known, we shall have $\frac{q-\frac{r}{e}}{2}$ or $c=-9$, and $\frac{q+\frac{r}{e}}{2}$ or $d=+309$,

and

and the Equations derived from this Suppoſition $e = o$ will be $yy - 9 = o$, and $yy + 309 = o$. $\therefore yy = 9$ and $y = \sqrt{9} = 3$, or -3, the other Value of y being impoſſible, &c. Q. E. I.

It is not without the utmoſt Pleaſure and Surprize (proceeds the Doctor) that I obſerve, what admirable Shifts Nature has to bring herſelf off upon all Occaſions when ſhe ſeems to be ſurrounded with inſupportable Difficulties; Shifts ſo far beyond all human Contrivance, that it is not always in the Power of human Underſtanding to trace out her Steps, and follow her, much leſs to preſcribe to her: But the ſublimer Parts of Mathematics, and more particularly the Doctrine of *Fluxions*, furniſh us ſtill with more frequent and pregnant Inſtances of this Kind, inſomuch that the ancient Sage (whether he knew it or not) had a great deal of Reaſon on his Side, when he cried out as he did,

Magna eſt veritas, & prævalebit.

Having now finiſh'd the Buſineſs of ſolving *affected Equations*, and, I hope, made every Thing ſufficiently plain, give me leave to apply theſe *Tables* to the Solution of the two Queſtions mention'd in the *Preface*, and I have done.

QUES-

QUESTION I.

In any right-angled Triangle, the Area $=294$, *and the Difference between the Hypothenuse and Perpendicular* $=14$ *being given; to find all the other Parts of the Triangle by a Simple Equation.*

SOLUTION.

PUT $2A$ = twice the Area $=588$, d = the Difference, &c. $=14$, T = the Tangent of the Angle BCA, (See Fig. *p.* 14.) t = Tangent of half the Angle BCA, Radius $=1$, and $a = AB$; then (*per Trigonom.*) as $T : 1 :: a : \frac{a}{T} = BC$, $\therefore$ $AB \times BC = 2A$, is $\frac{aa}{T} = 2A$, and $\therefore$ $a^2 = 2AT$. Again (*per Theorem page* 38. *line* 17. of Mr. THACKER'S MISCELLANY, &c. $\frac{2t}{1+t^2}$ = Sine of the Angle BCA, and $\frac{1-t^2}{1+t^2}$ = its Cosine, *viz.* the Sine of the Angle BAC.) we have $\frac{2t}{1+t^2} : a :: \frac{1-t^2}{1+t^2} : \frac{a-t^2a}{2t} = BC$, and $\frac{2t}{1+t^2} : a :: 1 : \frac{a+t^2a}{2t} = AC$, $\therefore AC - BC = d$ is to $\therefore a = \frac{d}{t}$, and $aa = \frac{d^2}{t^2}$, which being wrote for aa above, makes $\frac{d^2}{t^2} = 2AT$ $\therefore$ $d^2 = 2ATt^2$ and $\therefore$ $\frac{d^2}{2A} = Tt^2$, in Logarithms $\frac{d^2}{2A}$ is $= 9.5228787$, which answers in the Tables of Tt^2 (or $x^3 - bx = 2c$) to $26° : 33' : 54'' : 19'''$ = half the Angle

Angle BCA, $\because a = \frac{d}{t} = 28 = AB$, and $\frac{2A}{a} = 21 = BC$, consequently $AC = 35$. Q. E. I.

QUESTION II.

In any right-angled Triangle, the Area and the Sum of the Hypothenuſe, when added to either Side, being given, thence to find the Sides, &c. (*See* Ward, *&c.* P. 326.)

SOLUTION.

SUPPOSE $AB \times BC = 2A = 2700$, and $AC + BC = s = 120$, to find the Sides. (*See Fig. pag.* 14.) By proceeding to find BC and AC, as in the laſt Queſtion, we ſhall get $s = \frac{a}{t}$ $\because a = ts$, and $a^2 = t^2 s^2$ $\because$ * $t^2 s^2 = 2AT$, and $\therefore \frac{s^2}{2A}$ (in Logarithms) is $= \frac{T}{t^2} = 10.7269986$, which anſwers in the Tables of $\frac{T}{t^2}$ (or $bx - x^2 = 2c$) to $26° : 33' : 54'' : 19'''$, $\therefore a = ts = 60 = AB$, and $\frac{2700}{60} = 45$ is $= BC$, and conſequently AC is $= 75$. Q. E. I.

But 10.7269986 anſwers in the Tables of $\frac{T}{t^2}$ to $33° : 4' : 47'' : 14'''$ alſo, $\because$ we have 78.1667 for another Value of a, and $\frac{2700}{78.1667} = 34.54156$ is $= BC$, and conſequently AC is $= 85.45844$, which will alſo anſwer the Conditions of the Queſtion.

* Becauſe $a^2 = 2AT$. See the other Solution.

Now

Now if the Cubic Equation given by *Ward*, *viz.* $14400a - a^3 = 648000$ be ſolv'd by *Caſe* II. *pag.* 8. we ſhall find the Values of a to be $+60$, and $+78.1667$ the ſame as before, and ∴ the Sum of thoſe two Affirmative Values, with a contrary Sign, will be $= -138.1667$ the Negative one, by Remark *pag.* 18.

NEW
TABLES
FOR THE
SOLUTION
OF
Adfected Cubic EQUATIONS.

E

0 DEGREE.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	0.0000000	0.0000000	15	0	3.2204986	12.6612182
0	30	-2.9274522	0 0000000	15	30	3.2627689	12.6474303
1	0	-9.6922084	13.8373040	16	0	3 3045870	12.6331902
1	30	0.1693298	13.7112365	16	30	3.3442812	12.6202256
2	0	0.5952987	13.5362739	17	0	3 3835764	12.6068620
2	30	0.8683001	13.4170927	17	30	3 4209904	12.5946280
3	0	1.1235728	13.3001828	18	0	3.4580497	12.5820393
3	30	1.3154586	13.3021910	18	30	3.4934313	12.5704579
4	0	1.4983895	13.2352443	19	0	3 5284956	12.5585592
4	30	1.6464723	13.1894869	19	30	3.5620545	12.5475643
5	0	1.7891201	13.1383345	20	0	3 5953277	12.5362837
5	30	1.9096945	13.1005461	20	30	3.6272424	12.5258188
6	0	2.0266647	13.0591535	21	0	3.6588986	12.5150954
6	30	2.1283741	13.0269689	21	30	3.6893227	12.5051117
7	0	2.2275062	12.9922070	22	0	3.7195119	12.4948931
7	30	2.3154618	12.9641784	22	30	3.7485785	12.4853483
8	0	2.4014830	12.9342154	23	0	3.7774307	12.4755891
8	30	2.4789651	12.9093921	23	30	3.8052558	12.4664462
9	0	2.5549418	12.8830634	24	0	3.8328844	12.4571068
9	30	2.6241810	12.8609872	24	30	3.8595698	12.4483334
10	0	2.6922156	12.8373064	25	0	3.8860743	12.4393791
10	30	2.7547984	12.8171032	25	30	3.9117097	12.4309467
11	0	2 8163953	12.7959141	26	0	3.9371780	12.4223472
11	30	2.8734898	12.7774310	26	30	3 9618429	12.4142299
12	0	2.9297626	12.7581262	27	0	3 9863532	12.4059580
12	30	2.9822544	12.7410932	27	30	4.0101185	12.3981333
13	0	3.0340507	12.7233647	28	0	4.0337402	12.3901650
13	30	3 0826269	12.7075707	28	30	4.0566690	12.3826126
14	0	3.1306070	12.6911806	29	0	4.0794641	12.3749265
14	30	3.1758111	12.6764577	29	30	4.1016136	12.3676280
15	0	3.2204986	12.6612182	30	1	4.1236383	12.3602047

0 DEGREE.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	4.1236383	12.3602047	45	0	4.6519947	12.1841411
30	30	4.1450595	12.3531435	45	30	4.6663423	12.1793957
31	0	4.1663641	12.3459657	46	0	4.6806374	12.1745978
31	30	4.1871035	12.3391271	46	30	4.6946759	12.1699541
32	0	4.2077335	12.3321791	47	0	4.7086642	12.1652602
32	30	4.2278332	12.3255492	47	30	4.7224069	12.1607137
33	0	4.2478302	12.3188166	48	0	4.7361015	12.1561191
33	30	4.2673285	12.3123833	48	30	4.7495603	12.1516656
34	0	4.2867301	12.3058533	49	0	4.7629731	12.1471667
34	30	4.3056619	12.2996051	49	30	4.7761597	12.1428031
35	0	4.3245026	12.2932658	50	0	4.7893020	12.1383952
35	30	4.3428999	12.2871925	50	30	4.8022274	12.1341176
36	0	4.3612111	12.2810331	51	0	4.8151102	12.1297974
36	30	4.3791034	12.2751252	51	30	4.8277841	12.1256025
37	0	4.3969141	12.2691357	52	0	4.8404172	12.1213668
37	30	4.4143283	12.2633843	52	30	4.8528495	12.1172515
38	0	4.4316653	12.2575557	53	0	4.8652424	12.1130968
38	30	4.4486263	12.2519527	53	30	4.8774422	12.1090582
39	0	4.4655141	12.2462765	54	0	4.8896040	12.1049816
39	30	4.4820448	12.2408146	54	30	4.9015797	12.1010167
40	0	4.4985059	12.2352831	55	0	4.9135189	12.0970153
40	30	4.5146278	12.2299552	55	30	4.9252786	12.0931216
41	0	4.5306835	12.2245611	56	0	4.9370030	12.0891926
41	30	4.5464162	12.2193610	56	30	4.9485544	12.0853676
42	0	4.5620858	12.2140978	57	0	4.9600718	12.0815086
42	30	4.5774478	12.2090194	57	30	4.9714221	12.0777499
43	0	4.5927496	12.2038808	58	0	4.9827396	12.0739584
43	30	4.6077578	12.1989184	58	30	4.9938958	12.0702636
44	0	4.6227087	12.1938987	59	0	5.0050203	12.0665371
44	30	4.6373791	12.1890473	59	30	5.0159889	12.0629043
45	0	4.6519947	12.1841411	60	0	5.0269268	12.0592408

1 DEGREE.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - b = x2$	$bx - x^3 = 2c$
0	0	5.0269268	12.0592408	15	0	5.3178057	11.9623805
0	30	5.0371139	12.0556679	15	30	5.3264493	11.9595157
1	0	5.0484713	12.0520653	16	0	5.3350738	11.9566318
1	30	5.0590830	12.0485502	16	30	5.3436044	11.9538044
2	0	5.0696660	12.0450064	17	0	5.3521165	11.9509585
2	30	5.0801078	12.0415474	17	30	5.3605370	11.9481674
3	0	5.0905218	12.0380606	18	0	5.3689396	11.9453584
3	30	5.1007991	12.0346559	18	30	5.3772529	11.9426029
4	0	5.1110494	12.0312242	19	0	5.3855485	11.9398297
4	30	5.1211672	12.0278722	19	30	5.3937573	11.9371089
5	0	5.1312590	12.0244942	20	0	5.4019488	11.9343708
5	30	5.1412223	12.0211931	20	30	5.4100557	11.9316837
6	0	5.1511604	12.0178668	21	0	5.4181458	11.9289798
6	30	5.1609738	12.0146152	21	30	5.4261531	11.9263255
7	0	5.1707627	12.0113391	22	0	5.4341442	11.9236550
7	30	5.1804308	12.0081356	22	30	5.4420546	11.9210328
8	0	5.1900751	12.0049083	23	0	5.4499491	11.9183947
8	30	5.1996019	12.0017515	23	30	5.4577648	11.9158040
9	0	5.2091056	11.9985716	24	0	5.4655640	11.9131977
9	30	5.2184954	11.9954600	24	30	5.4732883	11.9106375
10	0	5.2278627	11.9923259	25	0	5.4809964	11.9080620
10	30	5.2371193	11.9892585	25	30	5.4886294	11.9055318
11	0	5.2463540	11.9861692	26	0	5.4962476	11.9029868
11	30	5.2554810	11.9831444	26	30	5.5037923	11.9004857
12	0	5.2645869	11.9800985	27	0	5.5113227	11.8979703
12	30	5.2735882	11.9771154	27	30	5.5187813	11.8954977
13	0	5.2825688	11.9741116	28	0	5.5262259	11.8930111
13	30	5.2914475	11.9711691	28	30	5.5336003	11.8905665
14	0	5.3003061	11.9682065	29	0	5.5409609	11.8881081
14	30	5.3090657	11.9653033	29	30	5.5482530	11.8856908
15	0	5.3178057	11.9623805	30	0	5.5555316	11.8832600

1 DEGREE.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	5.5555316	11.8832600	45	0	5.7565871	11.8163851
30	30	5.5627432	11.8808694	45	30	5.7627745	11.8143343
31	0	5.5699415	11.8784655	46	0	5.7689522	11.8122738
31	30	5.5770743	11.8761011	46	30	5.7750438	11.8102802
32	0	5.5841941	11.8737237	47	0	5.7812018	11.8082010
32	30	5.5912500	11 8713848	47	30	5.7872743	11.8061883
33	0	5.5982931	11.8690331	48	0	5.7933375	11.8041663
33	30	5.6052736	11.8667192	48	30	5.7993542	11.8021722
34	0	5.6122416	11.8643928	49	0	5.8053617	11.8001689
34	30	5.6191483	11.8621033	49	30	5 8113236	11.7981930
35	0	5.6260428	11.8598016	50	0	5.8172764	11.7962080
35	30	5.6328773	11.8575361	50	30	5.8251844	11.7942500
36	0	5.6396998	11.8552586	51	0	5.8290836	11.7922832
36	30	5 6464634	11.8530166	51	30	5.8349386	11.7903428
37	0	5 6532154	11.8507630	52	0	5.8407850	11.7883938
37	30	5.6599099	11.8485439	52	30	5.8465882	11.7864706
38	0	5.6665929	11.8463133	53	0	5.8523828	11.7845388
38	30	5.6732194	11.8441168	53	30	5.8581350	11.7826326
39	0	5.6798347	11.8419091	54	0	5.8638788	11.7807180
39	30	5.6863947	11.8397347	54	30	5.8695808	11.7788284
40	0	5 6929437	11 8375493	55	0	5.8752746	11.7769306
40	30	5 6994386	11.8353964	55	30	5.8809274	11.7750574
41	0	5.7059227	11 8332327	56	0	5.8865721	11.7731761
41	30	5.7123537	11.8311011	56	30	5.8921765	11.7713191
42	0	5.7187741	11.8289589	57	0	5.8977728	11 7694540
42	30	5.7251423	11.8268481	57	30	5.9033296	11.7676128
43	0	5.7315002	11.8247270	58	0	5.9088785	11.7657637
43	30	5.7378071	11.8226365	58	30	5.9143886	11.7639380
44	0	5.7441039	11.8205359	59	0	5.9198909	11.7621045
44	30	5.7503504	11.8184654	59	30	5.9253549	11.7602941
45	0	5 7565871	11 8163851	60	0	5.9308113	11.7584761

2 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	5.9308113	11.7584761	15	0	6.0845506	11.7074178
0	30	5.9362301	11.7566807	15	30	6.0893712	11.7058214
1	0	5.9416415	11.7548779	16	0	6.0941860	11.7042192
1	30	5.9470158	11.7530974	16	30	6.0989714	11.7026346
2	0	5.9523827	11.7513095	17	0	6.1037511	11.7010443
2	30	5.9577132	11.7495434	17	30	6.1085019	11.6994713
3	0	5.9630366	11.7477702	18	0	6.1132469	11.6978925
3	30	5.9683241	11.7460185	18	30	6.1179635	11.6963309
4	0	5.9736045	11.7442597	19	0	6.1226744	11.6947636
4	30	5.9788497	11.7425221	19	30	6.1273573	11.6932133
5	0	5.9840879	11.7407775	20	0	6.1320346	11.6916574
5	30	5.9892913	11.7390537	20	30	6.1366844	11.6901180
6	0	5.9944879	11.7373231	21	0	6.1413287	11.6885731
6	30	5.9996504	11.7356130	21	30	6.1459457	11.6870447
7	0	6.0048061	11.7338961	22	0	6.1505572	11.6855108
7	30	6.0099281	11.7321995	22	30	6.1551418	11.6839932
8	0	6.0150435	11.7304963	23	0	6.1597211	11.6824703
8	30	6.0201259	11.7288129	23	30	6.1642740	11.6809632
9	0	6.0252017	11.7271229	24	0	6.1688217	11.6794509
9	30	6.0302450	11.7254524	24	30	6.1733432	11.6779542
10	0	6 0352818	11 7237754	25	0	6.1778596	11.6764524
10	30	6 0402865	11.7221179	25	30	6.1823501	11.6749661
11	0	6.0452848	11.7204540	26	0	6.1868356	11.6734748
11	30	6.0502516	11.7188090	26	30	6.1912956	11.6719986
12	0	6.0552122	11.7171578	27	0	6.1957526	11.6705154
12	30	6.0601415	11.7155253	27	30	6.2001826	11.6690494
13	0	6.0650647	11.7138867	28	0	6.2046055	11.6675803
13	30	6.0699573	11.7122665	28	30	6.2090058	11.6661242
14	0	6.0748438	11.7106402	29	0	6.2134011	11.6646631
14	30	6.0797001	11.7090319	29	30	6.2177720	11.6632168
15	0	6.0845506	11.7074178	30	0	6.2221380	11.6617656

2 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	6.2221380	11.6617656	45	0	6.3466643	11.6204895
30	30	6.2264800	11.6603288	45	30	6.3506147	11.6191835
31	0	6.2308173	11.6588873	46	0	6.3545611	11.6178735
31	30	6.2351307	11.6574601	46	30	6.3584880	11.6165754
32	0	6.2394394	11.6560282	47	0	6.3624109	11.6152733
32	30	6.2437248	11.6546104	47	30	6.3663144	11.6139830
33	0	6.2480055	11.6531879	48	0	6.3702140	11.6126888
33	30	6.2522630	11.6517792	48	30	6.3740945	11.6114061
34	0	6.2565160	11.6503660	49	0	6.3779712	11.6101196
34	30	6.2607461	11.6489667	49	30	6.3818288	11.6088446
35	0	6.2649716	11.6475628	50	0	6.3856827	11.6075659
35	30	6.2691747	11.6461723	50	30	6.3895179	11.6062983
36	0	6.2733734	11.6447774	51	0	6.3933495	11.6050271
36	30	6.2775497	11.6433959	51	30	6.3971625	11.6037669
37	0	6.2817217	11.6420101	52	0	6.4009719	11.6025031
37	30	6.2858715	11.6406375	52	30	6.4047628	11.6012504
38	0	6.2900170	11.6392606	53	0	6.4085501	11.5999941
38	30	6.2941410	11.6378966	53	30	6.4123195	11.5987485
39	0	6.2982606	11.6365282	54	0	6.4160854	11.5974994
39	30	6.3023587	11.6351729	54	30	6.4198331	11.5962611
40	0	6.3064526	11.6338134	55	0	6.4235774	11.5950194
40	30	6.3105254	11.6324664	55	30	6.4273041	11.5937881
41	0	6.3145941	11.6311153	56	0	6.4310273	11.5925533
41	30	6.3186417	11.6297767	56	30	6.4347329	11.5913291
42	0	6.3226853	11.6284341	57	0	6.4384350	11.5901014
42	30	6.3267081	11.6271039	57	30	6.4421200	11.5888842
43	0	6.3307269	11.6257697	58	0	6.4458015	11.5876635
43	30	6.3347254	11.6244476	58	30	6.4494658	11.5864530
44	0	6.3387198	11.6231214	59	0	6.4531269	11.5852393
44	30	6.3426940	11.6218074	59	30	6.4567710	11.5840356
45	0	6.3466643	11.6204895	60	0	6.4604118	11.5828286

3 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	6.4604118	11.5828286	15	0	6.5651133	11.5482057
0	30	6.4640359	11.5816317	15	30	6.5684613	11.5471013
1	0	6.4676567	11.5804315	16	0	6.5718064	11.5459940
1	30	6.4712608	11.5792412	16	30	6.5751376	11.5448952
2	0	6.4748618	11.5780478	17	0	6.5784659	11.5437935
2	30	6.4784464	11.5768640	17	30	6.5817803	11.5427003
3	0	6.4820278	11.5756770	18	0	6.5850920	11.5416044
3	30	6.4855930	11.5844998	18	30	6.5883899	11.5405167
4	0	6.4891551	11.5733195	19	0	6.5916850	11.5394262
4	30	6.4927012	11 5721486	19	30	6 5949665	11.5383341
5	0	6.4962441	11.5709745	20	0	6.5982452	11.5372592
5	30	6.4997711	11.5698101	20	30	6.6015105	11.5361825
6	0	6.5032950	11.5686426	21	0	6.6047731	11.5351031
6	30	6.5068034	11.5674844	21	30	6.6080222	11.5340318
7	0	6.5103087	11.5663231	22	0	6.6112687	11.5329579
7	30	6.5137984	11.5651712	22	30	6.6145020	11.5318918
8	0	6.5172850	11.5640162	23	0	6.6177327	11.5308231
8	30	6.5207564	11.5628704	23	30	6 6209502	11.5297624
9	0	6.5242247	11.5617215	24	0	6.6241651	11.5286991
9	30	6.5276779	11.5605819	24	30	6.6273670	11.5276436
10	0	6.5311280	11.5594392	25	0	6.6305664	11.5265856
10	30	6 5345632	11.5583054	25	30	6.6337529	11.5255353
11	0	6.5379955	11.5571687	26	0	6.6369368	11.5244824
11	30	6.5414129	11.5560411	26	30	6.6401080	11.5234372
12	0	6.5448273	11.5549105	27	0	6.6432767	11.5223895
12	30	6 5482270	11.5537886	27	30	6.6464328	11.5213494
13	0	6.5516239	11.5526639	28	0	6.6495864	11.5203068
13	30	6.5550063	11.5515479	28	30	6.6527274	11 5192718
14	0	6 5583858	11.5504290	29	0	6.6568659	11.5172343
14	30	6.5617510	11.5493188	29	30	6.6599921	11.5162041
15	0	6 5651133	11.5482057	30	0	6.6621160	11.5161716

3 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	6.6621160	11.5161716	45	0	6.7524879	11.4863703
30	30	6.6652274	11.5151464	45	30	6.7553945	11.4854141
31	0	6.6683365	11.5141189	46	0	6.7582989	11.4844557
31	30	6.6714334	11.5130986	46	30	6.7611928	11.4835036
32	0	6.6745280	11.5120760	47	0	6.7640847	11.4825495
32	30	6.6776105	11.5110605	47	30	6.7669661	11.4816017
33	0	6.6806907	11.5100427	48	0	6.7698454	11.4806518
33	30	6.6837589	11.5090321	48	30	6.7727142	11.4797082
34	0	6.6868247	11.5080191	49	0	6.7755810	11.4787626
34	30	6.6898787	11.5070133	49	30	6.7784375	11.4778231
35	0	6.6929304	11.5060052	50	0	6.7812920	11.4768816
35	30	6.6959704	11.5050040	50	30	6.7841363	11.4759463
36	0	6.6990082	11.5040006	51	0	6.7869785	11.4750089
36	30	6.7020343	11.5030041	51	30	6.7898107	11.4740777
37	0	6.7050581	11.5020053	52	0	6.7926408	11.4731444
37	30	6.7080705	11.5010135	52	30	6.7954610	11.4722172
38	0	6.7110806	11.5000194	53	0	6.7982791	11.4712879
38	30	6.7140793	11.4990321	53	30	6.8010872	11.4703648
39	0	6.7170757	11.4980425	54	0	6.8038933	11.4694397
39	30	6.7200609	11.4970599	54	30	6.8066897	11.4685205
40	0	6.7230438	11.4960750	55	0	6.8094841	11.4675993
40	30	6.7260156	11.4950968	55	30	6.8122687	11.4666841
41	0	6.7289852	11.4941164	56	0	6.8150514	11.4657670
41	30	6.7319437	11.4931425	56	30	6.8178244	11.4648556
42	0	6.7349001	11.4921665	57	0	6.8205955	11.4639423
42	30	6.7378454	11.4911972	57	30	6.8233569	11.4630349
43	0	6.7407886	11.4902258	58	0	6.8261164	11.4621256
43	30	6.7437210	11.4892608	58	30	6.8288664	11.4612220
44	0	6.7466512	11.4882936	59	0	6.8316145	11.4603165
44	30	6.7495706	11.4873330	59	30	6.8343531	11.4594167
45	0	6.7524879	11.4863703	60	0	6.8370899	11.4585151

4 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	6.8370899	11.4585151	15	0	6.9166264	11.4323712
0	30	6.8398173	11.4576191	15	30	6.9191959	11.4315285
1	0	6.8425429	11.4567213	16	0	6.9217637	11.4306841
1	30	6.8452592	11.4558290	16	30	6.9243233	11.4298447
2	0	6.8479737	11.4549349	17	0	6.9268813	11.4290037
2	30	6.8506790	11.4540464	17	30	6.9294310	11.4281676
3	0	6.8533824	11.4531560	18	0	6.9319792	11.4273300
3	30	6.8560766	11.4522712	18	30	6.9345192	11.4264972
4	0	6.8587691	11.4513847	19	0	6.9370576	11.4256628
4	30	6.8614524	11.4505036	19	30	6.9395879	11.4248333
5	0	6.8641339	11.4496207	20	0	6.9421167	11.4240023
5	30	6.8668065	11.4487431	20	30	6.9446376	11.4231760
6	0	6.8694774	11.4478638	21	0	6.9471569	11.4223481
6	30	6.8721393	11.4469899	21	30	6.9496682	11.4215250
7	0	6.8747995	11.4461143	22	0	6.9521780	11.4207004
7	30	6.8774507	11.4452439	22	30	6.9546799	11.4198805
8	0	6.8801003	11.4443719	23	0	6.9571802	11.4190590
8	30	6.8827411	11.4435051	23	30	6.9596728	11.4182422
9	0	6.8853801	11.4426365	24	0	6.9621539	11.4174139
9	30	6.8880105	11.4417733	24	30	6.9646471	11.4166103
10	0	6.8906391	11.4409083	25	0	6.9671289	11.4157953
10	30	6.8932590	11.4400486	25	30	6.9696030	11.4149848
11	0	6.8958772	11.4391872	26	0	6.9720755	11.4141727
11	30	6.8984869	11.4383309	26	30	6.9745405	11.4133653
12	0	6.9010949	11.4374729	27	0	6.9770040	11.4125564
12	30	6.9036944	11.4366200	27	30	6.9794598	11.4117520
13	0	6.9062923	11.4357655	28	0	6.9819142	11.4109462
13	30	6.9088817	11.4349161	28	30	6.9843610	11.4101450
14	0	6.9114694	11.4340650	29	0	6.9868063	11.4093423
14	30	6.9140487	11.4332189	29	30	6.9892443	11.4085439
15	0	6.9166264	11.4323712	30	0	6.9916809	11.4077441

4 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	6.9916809	11.4077441	45	0	7.0627415	11.3844715
30	30	6.9941099	11.4069489	45	30	7.0650451	11.3837187
31	0	6.9965375	11.4061523	46	0	7.0673475	11.3829647
31	30	6.9989577	11.4053599	46	30	7.0696432	11.3822146
32	0	7.0013766	11.4045662	47	0	7.0719376	11.3814632
32	30	7.0037881	11.4037769	47	30	7.0742255	11.3807157
33	0	7.0061982	11.4029862	48	0	7.0765121	11.3799669
33	30	7.0086011	11.4021997	48	30	7.0787921	11.3792221
34	0	7.0110026	11.4014118	49	0	7.0810709	11.3784761
34	30	7.0133969	11.4006283	49	30	7.0833433	11.3777339
35	0	7.0157897	11.3998433	50	0	7.0856144	11.3769904
35	30	7.0181754	11.3990628	50	30	7.0878791	11.3762509
36	0	7.0205597	11.3982809	51	0	7.0901424	11.3755100
36	30	7.0229369	11.3975031	51	30	7.0923996	11.3747730
37	0	7.0253128	11.3967240	52	0	7.0946555	11.3740347
37	30	7.0276815	11.3959491	52	30	7.0969049	11.3733003
38	0	7.0300489	11.3951729	53	0	7.0991531	11.3725647
38	30	7.0324094	11.3944008	53	30	7.1013950	11.3718328
39	0	7.0347686	11.3936274	54	0	7.1036358	11.3710998
39	30	7.0371207	11.3928581	54	30	7.1058703	11.3703703
40	0	7.0394715	11.3920875	55	0	7.1081937	11.3696397
40	30	7.0418155	11.3913211	55	30	7.1103307	11.3689129
41	0	7.0441580	11.3905532	56	0	7.1125566	11.3681850
41	30	7.0464938	11.3897896	56	30	7.1147764	11.3674606
42	0	7.0488282	11.3890246	57	0	7.1169950	11.3667350
42	30	7.0511558	11.3882636	57	30	7.1192074	11.3660132
43	0	7.0534821	11.3875013	58	0	7.1214185	11.3652901
43	30	7.0558016	11.3867432	58	30	7.1236237	11.3645707
44	0	7.0581198	11.3859838	59	0	7.1258277	11.3638501
44	30	7.0604313	11.3852283	59	30	7.1280256	11.3631332
45	0	7.0627415	11.3844715	60	0	7.1302224	11.3624152

5 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$x - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	7.1302224	11.3624152	15	0	7.1944756	11.3414579
0	30	7.1324131	11.3617007	15	30	7.1965647	11.3407781
1	0	7.1346027	11.3609851	16	0	7.1986525	11.3400973
1	30	7.1367864	11.3602730	16	30	7.2007348	11.3394196
2	0	7.1389689	11.3595597	17	0	7.2028162	11.3387410
2	30	7.1411455	11.3588501	17	30	7.2048920	11.3380656
3	0	7.1433209	11.3581393	18	0	7.2069668	11.3373892
3	30	7.1454904	11.3574320	18	30	7.2090364	11.3367160
4	0	7.1476588	11.3567236	19	0	7.2111049	11.3360417
4	30	7.1498214	11.3560186	19	30	7.2131682	11.3353706
5	0	7.1519829	11.3553125	20	0	7.2152304	11.3346984
5	30	7.1541386	11.3546100	20	30	7.2172873	11.3340295
6	0	7.1562931	11.3539063	21	0	7.2193432	11.3333596
6	30	7.1584418	11.3532062	21	30	7.2213940	11.3326928
7	0	7.1605894	11.3525050	22	0	7.2234437	11.3320249
7	30	7.1627313	11.3518071	22	30	7.2254881	11.3313603
8	0	7.1648721	11.3511081	23	0	7.2275315	11.3306947
8	30	7.1670073	11.3504125	23	30	7.2295698	11.3300320
9	0	7.1691413	11.3497157	24	0	7.2316072	11.3293684
9	30	7.1712697	11.3490225	24	30	7.2336393	11.3287079
10	0	7.1733969	11.3483281	25	0	7.2356705	11.3280465
10	30	7.1755186	11.3476372	25	30	7.2376966	11.3273880
11	0	7.1776391	11.3469451	26	0	7.2397217	11.3267285
11	30	7.1797542	11.3462564	26	30	7.2417418	11.3260722
12	0	7.1818681	11.3455665	27	0	7.2437608	11.3254148
12	30	7.1839765	11.3448801	27	30	7.2457748	11.3247606
13	0	7.1860838	11.3441926	28	0	7.2477878	11.3241054
13	30	7.1881857	11.3435083	28	30	7.2497958	11.3234532
14	0	7.1902865	11.3428229	29	0	7.2518028	11.3228000
14	30	7.1923817	11.3421409	29	30	7.2538049	11.3221497
15	0	7.1944756	11.3414579	30	0	7.2558061	11.3214985

5 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	7.2558061	11.3214985	45	0	7.3144758	11.3024494
30	30	7.2578023	11.3208503	45	30	7.3163875	11.3018301
31	0	7.2597975	11.3202011	46	0	7.3182983	11.3012099
31	30	7.2617877	11.3195549	46	30	7.3202046	11.3005924
32	0	7.2637770	11.3189078	47	0	7.3221101	11.2999741
32	30	7.2657616	11.3182636	47	30	7.3240112	11.2993584
33	0	7.2677451	11.3176183	48	0	7.3259114	11.2987418
33	30	7.2697238	11.3169762	48	30	7.3278070	11.2981280
34	0	7.2717014	11.3163330	49	0	7.3297018	11.2975134
34	30	7.2736744	11.3156928	49	30	7.3315923	11.2969013
35	0	7.2756463	11.3150515	50	0	7.3334819	11.2962883
35	30	7.2776135	11.3144133	50	30	7.3353671	11.2956781
36	0	7.2795797	11.3137741	51	0	7.3372514	11.2950670
36	30	7.2815412	11.3131378	51	30	7.3391314	11.2944586
37	0	7.2835017	11.3125005	52	0	7.3410105	11.2938493
37	30	7.2854575	11.3118661	52	30	7.3428853	11.2932427
38	0	7.2874124	11.3112308	53	0	7.3447592	11.2926352
38	30	7.2893625	11.3105983	53	30	7.3466287	11.2920303
39	0	7.2913117	11.3099649	54	0	7.3484975	11.2914247
39	30	7.2932564	11.3093344	54	30	7.3503621	11.2908215
40	0	7.2952000	11.3087028	55	0	7.3522258	11.2902174
40	30	7.2971390	11.3080742	55	30	7.3540852	11.2896160
41	0	7.2990771	11.3074447	56	0	7.3559438	11.2890138
41	30	7.3010107	11.3068179	56	30	7.3577980	11.2884142
42	0	7.3029433	11.3061901	57	0	7.3596515	11.2878139
42	30	7.3048713	11.3055653	57	30	7.3615009	11.2872159
43	0	7.3067983	11.3049395	58	0	7.3633494	11.2866170
43	30	7.3087209	11.3043165	58	30	7.3651937	11.2860209
44	0	7.3106425	11.3036925	59	0	7.3670371	11.2854239
44	30	7.3125596	11.3030714	59	30	7.3688764	11.2848294
45	0	7.3144758	11.3024494	60	0	7.3707149	11.2842341

6 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	7·3707149	11.2842341	15	0	7 4247248	11.2667856
0	30	7·3725493	11.2836413	15	30	7.4264881	11.2662173
1	0	7·3743829	11.2830477	16	0	7 4282506	11.2656482
1	30	7·3762124	11.2824566	16	30	7.4300094	11.2650814
2	0	7·3780410	11.2818646	17	0	7.4317675	11.2645139
2	30	7·3798655	11.2812753	17	30	7 4335217	11.2639487
3	0	7.3816892	11.2806852	18	0	7.4352752	11.2633828
3	30	7·3835089	11.2800973	18	30	7 4370250	11.2628190
4	0	7·3853279	11.2795087	19	0	7.4387741	11.2622545
4	30	7·3871427	11.2789227	19	30	7.4405194	11.2616924
5	0	7·3889567	11.2783359	20	0	7.4422640	11.2611296
5	30	7·3907667	11.2777515	20	30	7.4440048	11.2605690
6	0	7·3925759	11.2771663	21	0	7.4457449	11.2600077
6	30	7·3943811	11.2765835	21	30	7.4474814	11.2594486
7	0	7·3961855	11.2759999	22	0	7.4492172	11.2588888
7	30	7·3979861	11.2754187	22	30	7.4509493	11.2583311
8	0	7·3997859	11.2748367	23	0	7.4526807	11.2577727
8	30	7 4015816	11.2742572	23	30	7.4544085	11.2572167
9	0	7.4033765	11.2736769	24	0	7.4561355	11.2566599
9	30	7.4051675	11.2730991	24	30	7.4578588	11 2561054
10	0	7.4069577	11.2725205	25	0	7.4595814	11.2555502
10	30	7.4087440	11.2719442	25	30	7.4613004	11.2549970
11	0	7 4105296	11.2713672	26	0	7.4630188	11.2544432
11	30	7.4123113	11.2707925	26	30	7.4647336	11.2538916
12	0	7.4140922	11.2702170	27	0	7.4664477	11.2533393
12	30	7.4158693	11.2696439	27	30	7 4681581	11.2527891
13	0	7.4176456	11.2690700	28	0	7.4698679	11.2522383
13	30	7.4194181	11.2684985	28	30	7.4715742	11.2516896
14	0	7.4211898	11.2679262	29	0	7.4732798	11.2511402
14	30	7 4229577	11.2673563	29	30	7.4749818	11.2505930
15	0	7.4247248	11.2667856	30	0	7.4766831	11.2500451

6 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	7.4766831	11.2500451	45	0	7.5267475	11.2339599
30	30	7.4783809	11.2494993	45	30	7.5283848	11.2334352
31	0	7.4800781	11.2489529	46	0	7.5300213	11.2329097
31	30	7.4817716	11.2484086	46	30	7.5316547	11.2323863
32	0	7.4834645	11.2478637	47	0	7.5332874	11.2318622
32	30	7.4851540	11.2473208	47	30	7.5349169	11.2313401
33	0	7.4868428	11.2467772	48	0	7.5365458	11.2308174
33	30	7.4885280	11.2462358	48	30	7.5381714	11.2302966
34	0	7.4902126	11.2456938	49	0	7.5397964	11.2297752
34	30	7.4918938	11.2451538	49	30	7.5414183	11.2292557
35	0	7.4935743	11.2446131	50	0	7.5430396	11.2287356
35	30	7.4952514	11.2440744	50	30	7.5446577	11.2282175
36	0	7.4969279	11.2435351	51	0	7.5462751	11.2276987
36	30	7.4986009	11.2429979	51	30	7.5478893	11.2271819
37	0	7.5002733	11.2424601	52	0	7.5495029	11.2266645
37	30	7.5019422	11.2419244	52	30	7.5511134	11.2261490
38	0	7.5036104	11.2413880	53	0	7.5527233	11.2256329
38	30	7.5052754	11.2408536	53	30	7.5543301	11.2251187
39	0	7.5069397	11.2403185	54	0	7.5559362	11.2246038
39	30	7.5086005	11.2397855	54	30	7.5575393	11.2240909
40	0	7.5102607	11.2392519	55	0	7.5591417	11.2235773
40	30	7.5119177	11.2387203	55	30	7.5607411	11.2230657
41	0	7.5135740	11.2381880	56	0	7.5623398	11.2225534
41	30	7.5152269	11.2376577	56	30	7.5639355	11.2220431
42	0	7.5168792	11.2371268	57	0	7.5655305	11.2215321
42	30	7.5185282	11.2365980	57	30	7.5671224	11.2210230
43	0	7.5201765	11.2360685	58	0	7.5687138	11.2205134
43	30	7.5218216	11.2355410	58	30	7.5703020	11.2200056
44	0	7.5234660	11.2350128	59	0	7.5718897	11.2194973
44	30	7.5251071	11.2344867	59	30	7.5734745	11.2189907
45	0	7.5267475	11.2339599	60	0	7.5750587	11.2184835

7 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	7.5750587	11.2184835	15	0	7.6217421	11.2035741
0	30	7.5766396	11.2179782	15	30	7.6232709	11.2030869
1	0	7.5782201	11.2174725	16	0	7.6247993	11.2025993
1	30	7.5797976	11.2169684	16	30	7.6263248	11.2021134
2	0	7.5813745	11.2164637	17	0	7.6278497	11.2016269
2	30	7.5829484	11.2159610	17	30	7.6293718	11.2011422
3	0	7.5845216	11.2154576	18	0	7.6308934	11.2006570
3	30	7.5860920	11.2149560	18	30	7.6324123	11.2001733
4	0	7.5876618	11.2144538	19	0	7.6339307	11.1996891
4	30	7.5892285	11.2139535	19	30	7.6354463	11.1992067
5	0	7.5907947	11.2134527	20	0	7.6369613	11.1987237
5	30	7.5923580	11.2129536	20	30	7.6384736	11.1982424
6	0	7.5939207	11.2124539	21	0	7.6399853	11.1977603
6	30	7.5954804	11.2119560	21	30	7.6414944	11.1972804
7	0	7.5970396	11.2114576	22	0	7.6430029	11.1967997
7	30	7.5985958	11.2109610	22	30	7.6445085	11.1963207
8	0	7 6001514	11.2104638	23	0	7.6460137	11.1958413
8	30	7.6009042	11.2107684	23	30	7.6475162	11.1953634
9	0	7.6032564	11.2094724	24	0	7.6490181	11.1948849
9	30	7.6048057	11.2089781	24	30	7.6505174	11.1944082
10	0	7.6063545	11 2084833	25	0	7.6520161	11.1939309
10	30	7.6079003	11.2079903	25	30	7.6535123	11.1934553
11	0	7.6094456	11.2074968	26	0	7.6550079	11.1929791
11	30	7.6109881	11.2070049	26	30	7.6565007	11.1925045
12	0	7.6125300	11.2065124	27	0	7.6579931	11.1920295
12	30	7 6140690	11.2060218	27	30	7.6594827	11.1915561
13	0	7.6156074	11.2055306	28	0	7.6609719	11.1910823
13	30	7.6172430	11 2049412	28	30	7.6624584	11.1906100
14	0	7.6186780	11.2045512	29	0	7.6639444	11.1901372
14	30	7.6202103	11.2040629	29	30	7.6654278	11.1896660
15	0	7 6217421	11.2035741	30	0	7.6669107	11.1891943

7 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	7.6669107	11.1891943	45	0	7.7106665	11.1753101
30	30	7.6683909	11.1887241	45	30	7.7121012	11.1748560
31	0	7.6698707	11.1882535	46	0	7.7135355	11.1744015
31	30	7.6713477	11 1877845	46	30	7.7149674	11.1739484
32	0	7.6728243	11.1873151	47	0	7.7163988	11.1734948
32	30	7.6742982	11.1868472	47	30	7.7178277	11.1730427
33	0	7.6757717	11.1863789	48	0	7.7192562	11.1725902
33	39	7.6772426	11.1859120	48	30	7.7206822	11.1721391
34	0	7.6787131	11.1854447	49	0	7.7221080	11.1716876
34	30	7.6801809	11.1849789	49	30	7.7235311	11.1712375
35	0	7.6816482	11.1845126	50	0	7.7249538	11.1707870
35	30	7.6831130	11.1840480	50	30	7.7263742	11 1703380
36	0	7.6845772	11.1835828	51	0	7.7277941	11.1698885
36	30	7.6860389	11.1831193	51	30	7.7292116	11.1694404
37	0	7.6875000	11.1826552	52	0	7.7306286	11.1689918
37	30	7.6889587	11.1821927	52	30	7.7320432	11.1685448
38	0	7 6904169	11.1817297	53	0	7.7334574	11.1680974
38	30	7.6918725	11.1812683	53	30	7.7348691	11.1676513
39	0	7.6933276	11.1808064	54	0	7.7362805	11.1672049
39	30	7.6947802	11.1803460	54	30	7.7376894	11.1667598
40	0	7.6962323	11.1798851	55	0	7.7390979	11.1663143
40	30	7.6976819	11 1794257	55	30	7.7405041	11.1658703
41	0	7.6991311	11.1789659	56	0	7.7419098	11.1654258
41	30	7.7005776	11.1785076	56	30	7.7433131	11.1649827
42	0	7.7020237	11.1780489	57	0	7.7447160	11.1645392
42	30	7.7034674	11.1775916	57	30	7.7461166	11.1640972
43	0	7.7049106	11.1771338	58	0	7.7475167	11.1636547
43	30	7.7063513	11 1766777	58	30	7.7489145	11.1632137
44	0	7.7077914	11.1762210	59	0	7.7503118	11.1627722
44	30	7.7092292	11.1757658	59	30	7.7517068	11.1623320
45	0	7.7106665	11.1753101	60	0	7.7531014	11.1618914

8 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	7.7531014	11.1618914	15	0	7.7942994	11.1489102
0	30	7.7544937	11.1614523	15	30	7.7956519	11.1484851
1	0	7.7558855	11.1610127	16	0	7.7970040	11.1480596
1	30	7.7572751	11.1605745	16	30	7.7983539	11.1476355
2	0	7.7586643	11.1601359	17	0	7.7997034	11.1472110
2	30	7.7600511	11.1596987	17	30	7.8010506	11.1467878
3	0	7.7614374	11.1592610	18	0	7.8023974	11.1463642
3	30	7.7628216	11.1588248	18	30	7.8037423	11.1459419
4	0	7.7642053	11.1583881	19	0	7.8050867	11.1455191
4	30	7.7655867	11.1579527	19	30	7.8064289	11.1450977
5	0	7.7669677	11.1575169	20	0	7.8077707	11.1446759
5	30	7.7683464	11.1570826	20	30	7.8091104	11.1442554
6	0	7.7697247	11.1566479	21	0	7.8104497	11.1438345
6	30	7.7711007	11.1562145	21	30	7.8117869	11.1434149
7	0	7.7724763	11.1557807	22	0	7.8131236	11.1429948
7	30	7.7738498	11.1553482	22	30	7.8144583	11.1425761
8	0	7.7752228	11.1549152	23	0	7.8157926	11.1421570
8	30	7.7765935	11.1544837	23	30	7.8171247	11.1417391
9	0	7.7779638	11.1540518	24	0	7.8184565	11.1413209
9	30	7.7793318	11.1536212	24	30	7.8197862	11.1409040
10	0	7.7806994	11.1531902	25	0	7.8211155	11.1404867
10	30	7.7820648	11.1527606	25	30	7.8224427	11.1400705
11	0	7.7834298	11.1523306	26	0	7.8237696	11.1396540
11	30	7.7847927	11.1519019	26	30	7.8250944	11.1392388
12	0	7.7861551	11.1514727	27	0	7.8264188	11.1388232
12	30	7.7875153	11.1510449	27	30	7.8277411	11.1384089
13	0	7.7888751	11.1506167	28	0	7.8290630	11.1379942
13	30	7.7902327	11.1501897	28	30	7.8303828	11.1375808
14	0	7.7915900	11.1497624	29	0	7.8317022	11.1371670
14	30	7.7929449	11.1493365	29	30	7.8330196	11.1367544
15	0	7.7942994	11.1489102	30	0	7.8343366	11.1363414

8 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	7.8343366	11.1363414	45	0	7.8732827	11.1241619
30	30	7.8356517	11.1359297	45	30	7.8745624	11.1237628
31	0	7.8369663	11.1355175	46	0	7.8758418	11.1233634
31	30	7.8382789	11.1351067	46	30	7.8771193	11.1229651
32	0	7.8395911	11.1346955	47	0	7.8783964	11.1225664
32	30	7.8409012	11.1342854	47	30	7.8796717	11.1221689
33	0	7.8422110	11.1338750	48	0	7.8809466	11.1217710
33	30	7.8435189	11.1334659	48	30	7.8822195	11.1213743
34	0	7.8448263	11.1330563	49	0	7.8834921	11.1209773
34	30	7.8461316	11.1326480	49	30	7.8847629	11.1205813
35	0	7.8474366	11.1322394	50	0	7.8860334	11.1201850
35	30	7.8487397	11.1318319	50	30	7.8873019	11.1197899
36	0	7.8500424	11.1314240	51	0	7.8885700	11.1193944
36	30	7.8513430	11.1310174	51	30	7.8898362	11.1190002
37	0	7.8526433	11.1306105	52	0	7.8911020	11.1186056
37	30	7.8539415	11.1302047	52	30	7.8923661	11.1182121
38	0	7.8552394	11.1297986	53	0	7.8936298	11.1178182
38	30	7.8565354	11.1293938	53	30	7.8948917	11.1174255
39	0	7.8578309	11.1289885	54	0	7.8961532	11.1170324
39	30	7.8591246	11.1285844	54	30	7.8974128	11.1166406
40	0	7.8604178	11 1281798	55	0	7.8986720	11.1162484
40	30	7.8617092	11.1277766	55	30	7.8999294	11.1158572
41	0	7.8630001	11.1273729	56	0	7.9011865	11.1154657
41	30	7.8642891	11.1269705	56	30	7.9024418	11.1150754
42	0	7.8655777	11.1265677	57	0	7.9036967	11.1146847
42	30	7 8668643	11.1261661	57	30	7.9049497	11.1142951
43	0	7.8681506	11.1257642	58	0	7.9062025	11.1139053
43	30	7.8694349	11.1253633	58	30	7.9074533	11.1135165
44	0	7.8707190	11.1249622	59	0	7.9087038	11.1131274
44	30	7 8720010	11.1245622	59	30	7.9099526	11.1127394
45	0	7.8732827	11.1241619	60	0	7.9112010	11.1123510

9 DEGREES.

Minutes	Seconds	$-bx=2c$	$x-x^3=2c$	Minutes	Seconds	$x^3-bx=$	$bx-x^3=2c$
0	0	7.9112010	11.1123510	15	0	7.9481505	11.1008893
0	30	7.9124476	11.1119638	15	30	7.9493657	11.1005133
1	0	7.9136939	11.1115763	16	0	7.9505807	11.1001371
1	30	7.9149384	11.1111898	16	30	7.9517939	11.0997619
2	0	7.9161825	11 1108029	17	0	7.9530068	11.0993864
2	30	7.9174247	11.1104173	17	30	7.9542181	11.0990119
3	0	7.9186666	11.1100314	18	0	7.9554291	11.0986371
3	30	7.9199068	11.1096464	18	30	7.9566382	11.0982634
4	0	7.9211467	11 1092611	19	0	7.9578470	11.0978894
4	30	7.9223848	11 1088770	19	30	7 9590542	11.0975164
5	0	7.9236225	11.1084925	20	0	7 9602611	11.0971431
5	30	7.9248585	11.1081091	20	30	7.9614664	11.0967708
6	0	7.9260941	11.1077253	21	0	7.9626713	11 0963981
6	30	7.9273279	11.1074427	21	30	7.9638744	11 0960266
7	0	7.9285614	11.1069598	22	0	7.9650773	11.0956549
7	30	7.9297931	11.1065779	22	30	7.9662786	11 0952840
8	0	7.9310245	11.1061957	23	0	7.9674795	11 0949127
8	30	7.9322542	11.1058146	23	30	7.9686788	11.0945426
9	0	7.9334835	11.1054331	24	0	7.9698778	11.0941722
9	30	7.9347110	11.1050528	24	30	7 9710750	11.0938028
10	0	7.9359382	11.1046722	25	0	7.9722720	11 0934332
10	30	7 9371638	11.1042926	25	30	7.9734673	11.0930645
11	0	7 9383890	11.1039126	26	0	7.9746623	11.0926955
11	30	7 9396124	11.1035336	26	30	7.9758557	11.0923275
12	0	7.9408356	11.1031544	27	0	7.9770488	11 0919592
12	30	7 9420569	11.1027763	27	30	7.9782403	11.0915919
13	0	7.9432779	11.1023979	28	0	7.9794314	11.0912242
13	30	7.9444973	11.1020205	28	30	7.9806209	11 0908577
14	0	7.9457163	11.1016427	29	0	7.9818101	11.0904909
14	30	7 9469336	11.1012662	29	30	7.9829976	11 0901250
15	0	7.948 505	11.1008893	30	0	7.9841849	11.0897589

9 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	7.9841849	11.0897589	45	0	8.0193539	11.0789435
30	30	7.9853705	11.0893937	45	30	8.0205115	11.0785885
31	0	7.9865558	11.0890282	46	0	8.0216689	11.0782333
31	30	7.9877397	11.0886637	46	30	8.0228247	11.0778791
32	0	7.9889232	11.0882988	47	0	8.0239801	11.0775245
32	30	7.9901050	11.0879350	47	30	8.0251342	11.0771708
33	0	7.9912865	11.0875709	48	0	8.0262880	11.0768168
33	30	7.9924664	11.0872078	48	30	8.0274402	11.0764640
34	0	7.9936461	11.0868445	49	0	8.0285920	11.0761108
34	30	7.9948241	11.0864821	49	30	8.0297424	11.0757584
35	0	7.9960018	11.0861194	50	0	8.0308926	11 0754058
35	30	7.9971779	11.0857577	50	30	8.0320412	11.0750542
36	0	7.9983537	11.0853957	51	0	8.0331895	11.0747023
36	30	7.9995279	11.0850347	51	30	8.0343364	11.0743512
37	0	8.0007019	11.0846735	52	0	8.0354831	11.0739999
37	30	8.0018743	11.0843131	52	30	8.0366281	11.0736495
38	0	8.0030464	11.0839524	53	0	8.0377729	11 0732989
38	30	8.0042169	11 0835927	53	30	8.0389162	11.0729492
39	0	8.0053872	11.0832328	54	0	8.0400592	11.0725992
39	30	8.0065558	11.0828738	54	30	8.0412008	11.0722502
40	0	8.0077241	11.0825145	55	0	8 0423420	11.0719008
40	30	8.0088910	11.0821562	55	30	8.0434817	11.0715525
41	0	8.0100576	11.0817976	56	0	8 0446211	11.0712039
41	30	8.0112224	11.0814400	56	30	8.0457592	11.0708562
42	0	8.0123870	11.0810822	57	0	8 0468969	11.0705081
42	30	8.0135502	11.0807252	57	30	8.0480332	11.0701610
43	0	8.0147131	11,0803679	58	0	8.0491692	11.0698136
43	30	8.0158744	11.0800116	58	30	8.0503037	11.0694671
44	0	8.0170354	11 0796550	59	0	8.0514380	11.0691204
44	30	8.0181958	11.0792984	59	30	8.0525709	11.0687745
45	0	8.0193539	11.0789435	60	0	8.0537035	11.0684283

10 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	8.0537035	11.0684283	15	0	8.0872761	11.0581993
0	30	8.0548345	11.0680831	15	30	8.0883820	11.0578634
1	0	8.0559653	11.0677377	16	0	8.0894876	11.0575272
1	30	8.0570947	11.0673931	16	30	8.0905919	11.0571919
2	0	8.0582238	11.0670482	17	0	8.0916959	11.0568563
2	30	8.0593514	11.0667042	17	30	8.0927985	11.0565217
3	0	8.0604788	11.0663600	18	0	8.0939008	11.0561868
3	30	8.0616047	11.0660167	18	30	8.0950018	11.0558526
4	0	8.0627304	11.0656732	19	0	8.0961026	11.0555182
4	30	8.0638546	11.0653304	19	30	8.0972020	11.0551848
5	0	8.0649787	11.0649875	20	0	8.0983011	11.0548511
5	30	8.0661012	11.0646454	20	30	8.0993989	11.0545181
6	0	8.0672235	11.0643031	21	0	8.1004965	11.0541849
6	30	8.0683443	11.0639617	21	30	8.1015926	11.0538526
7	0	8.0694648	11.0636200	22	0	8.1026885	11.0535201
7	30	8.0705840	11.0632792	22	30	8.1037832	11.0531884
8	0	8.0717029	11.0629381	23	0	8.1048775	11.0528563
8	30	8.0728203	11.0625979	23	30	8.1059705	11.0525253
9	0	8.0739375	11.0622575	24	0	8.1070632	11.0521940
9	30	8.0750533	11.0619179	24	30	8.1081546	11.0518634
10	0	8.0761689	11.0615781	25	0	8.1092458	11.0515326
10	30	8.0772831	11.0612391	25	30	8.1103356	11.0512026
11	0	8.0783970	11.0608998	26	0	8.1114252	11.0508724
11	30	8.0795095	11.0605615	26	30	8.1125134	11.0505430
12	0	8.0806217	11.0602229	27	0	8.1136014	11.0502134
12	30	8.0817325	11.0598851	27	30	8.1146881	11.0498847
13	0	8.0828431	11.0595471	28	0	8.1157745	11.0495557
13	30	8.0839523	11.0592099	28	30	8.1168595	11.0492275
14	0	8.0850613	11.0588725	29	0	8.1179443	11.0488991
14	30	8.0861688	11.0585360	29	30	8.1190279	11.0485715
15	0	8.0872761	11.0581993	30	0	8.1201112	11.0482436

10 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	8.1201112	11.0482436	45	0	8.1522459	11.0385491
30	30	8.1211932	11.0479166	45	30	8.1533052	11.0382306
31	0	8.1222749	11.0475893	46	0	8.1543642	11.0379118
31	30	8.1233554	11.0472628	46	30	8.1554219	11.0375939
32	0	8.1244357	11.0469361	47	0	8.1564794	11.0372758
32	30	8.1255145	11.0466103	47	30	8.1575357	11.0369583
33	0	8.1265930	11.0462842	48	0	8.1585918	11.0366406
33	30	8.1276705	11.0459589	48	30	8.1596466	11.0363238
34	0	8.1287476	11.0456332	49	0	8.1607012	11.0360068
34	30	8.1298234	11.0453086	49	30	8.1617546	11.0356904
35	0	8.1308989	11.0449837	50	0	8.1628078	11.0353738
35	30	8.1319731	11.0446595	50	30	8.1638596	11.0350580
36	0	8.1330472	11.0443352	51	0	8.1649113	11.0347421
36	30	8.1341199	11.0440115	51	30	8.1659617	11.0344269
37	0	8.1351925	11.0436877	52	0	8.1670119	11.0341115
37	30	8.1362637	11.0433647	52	30	8.1680610	11.0337968
38	0	8.1373347	11.0430415	53	0	8.1691098	11.0334818
38	30	8.1384044	11.0427190	53	30	8.1701573	11.0331677
39	0	8.1394739	11.0423963	54	0	8.1712046	11.0328534
39	30	8.1405420	11.0420744	54	30	8.1722508	11.0325398
40	0	8.1416100	11.0417524	55	0	8.1732967	11.0322259
40	30	8.1426767	11.0414311	55	30	8.1743414	11.0319128
41	0	8.1437431	11.0411095	56	0	8.1753859	11.0315995
41	30	8.1448083	11.0407887	56	30	8.1764292	11.0312870
42	0	8.1458733	11.0404677	57	0	8.1774723	11.0309743
42	30	8.1469371	11.0401475	57	30	8.1785141	11.0306623
43	0	8.1480006	11.0398270	58	0	8.1795557	11.0303501
43	30	8.1490628	11.0395074	58	30	8.1805961	11.0300387
44	0	8.1501247	11.0391875	59	0	8.1816363	11.0297271
44	30	8.1511854	11.0388684	59	30	8.1826753	11.0294161
45	0	8.1522459	11.0385491	60	0	8.1837142	11.0291050

11 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	8.1837142	11.0291050	15	0	8.2145479	11.0199007
0	30	8.1847518	11.0287946	15	30	8.2155649	11.0195981
1	0	8.1857892	11 0284840	16	0	8.2165817	11.0192953
1	30	8.1868253	11.0281741	16	30	8.2175973	11.0189933
2	0	8.1878513	11.0278641	17	0	8.2186127	11.0186911
2	30	8.1888960	11.0275548	17	30	8.2196270	11.0183896
3	0	8.1899306	11.0272454	18	0	8.2206411	11.0180879
3	30	8.1909640	11.0269366	18	30	8.2216542	11.0177868
4	0	8.1919972	11.0266276	19	0	8.2226670	11.0174854
4	30	8.1930292	11.0263192	19	30	8.2236786	11.0171850
5	0	8.1940611	11.0260107	20	0	8.2246900	11.0168844
5	30	8.1950916	11.0257030	20	30	8.2257003	11.0165843
6	0	8.1961220	11.0253952	21	0	8.2267105	11.0162841
6	30	8.1971513	11.0250879	21	30	8.2277195	11.0159845
7	0	8.1981804	11.0247804	22	0	8.2287284	11.0156848
7	30	8.1992081	11.0244737	22	30	8.2297361	11.0153857
8	0	8.2002357	11.0241669	23	0	8.2307436	11.0150864
8	30	8.2012623	11.0238607	23	30	8.2317500	11.0147880
9	0	8.2022886	11.0235542	24	0	8.2327561	11.0144893
9	30	8 2033137	11.0232487	24	30	8.2337613	11.0141913
10	0	8.2043385	11 0229429	25	0	8.2347662	11.0138930
10	30	8.2053623	11.0226377	25	30	8.2357690	11.0135955
11	0	8.2063859	11.0223323	26	0	8.2367734	11.0132978
11	30	8.2074083	11.0220277	26	30	8.2377760	11.0130008
12	0	8.2084304	11.0217228	27	0	8.2387783	11.0127035
12	30	8 2094515	11.0214187	27	30	8.2397794	11.0124070
13	0	8.2104724	11.0211144	28	0	8.2407804	11.0121104
13	30	8.2114920	11.0208108	28	30	8.2417803	11.0118143
14	0	8.2125115	11.0205071	29	0	8.2427801	11.0115181
14	30	8.2135298	11.0202040	29	30	8.2437787	11.0112225
15	0	8.2145479	11.0199007	30	0	8.2447771	11.0109267

11 DEGREES.

Minutes	Seconds	$c^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	8.2447771	11.0109267	45	0	8.2744299	11.0021739
30	30	8.2457745	11.0104317	45	30	8.2754085	11.0018861
31	0	8.2467716	11.0103364	46	0	8.2763869	11.0015981
31	30	8.2477677	11.0100419	46	30	8.2773642	11.0013108
32	0	8.2487635	11.0097471	47	0	8.2783413	11.0010233
32	30	8.2497583	11.0094531	47	30	8.2793175	11.0007363
33	0	8.2507528	11.0091588	48	0	8.2802936	11.0004492
33	30	8.2517464	11.0088652	48	30	8.2812685	11.0001627
34	0	8.2527398	11.0085714	49	0	8.2822433	10.9998761
34	30	8.2537321	11.0082783	49	30	8.2832170	10.9995902
35	0	8.2547241	11.0079849	50	0	8.2841905	10.9993041
35	30	8.2557151	11.0076923	50	30	8.2851630	10.9990186
36	0	8.2567059	11.0073995	51	0	8.2861354	10.9987330
36	30	8.2576956	11.0071074	51	30	8.2871067	10.9983479
37	0	8.2586851	11.0068151	52	0	8.2880779	10.9981627
37	30	8.2596736	11.0065234	52	30	8.2890480	10.9978782
38	0	8.2606620	11.0062316	53	0	8.2900179	10.9975935
38	30	8.2616492	11.0059404	53	30	8.2909869	10.9973093
39	0	8.2626362	11.0056490	54	0	8.2919557	10.9970249
39	30	8.2636222	11.0053584	54	30	8.2929235	10.9967413
40	0	8.2646080	11.0050676	55	0	8.2938911	10.9964575
40	30	8.2655927	11.0047773	55	30	8.2948576	10.9961744
41	0	8.2665773	11.0044869	56	0	8.2958239	10.9958911
41	30	8.2675608	11.0041972	56	30	8.2967893	10.9956083
42	0	8.2685441	11.0039073	57	0	8.2977546	10.9953254
42	30	8.2695264	11.0036180	57	30	8.2987188	10.9950432
43	0	8.2705085	11.0033285	58	0	8.2996827	10.9947607
43	30	8.2714895	11.0030397	58	30	8.3006458	10.9944790
44	0	8.2724704	11.0027508	59	0	8.3016086	10.9941970
44	30	8.2734502	11.0024624	59	30	8.3025705	10.9939157
45	0	8.2744299	11.0021739	60	0	8.3035321	10.9936341

12 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	8.3035321	10.9936341	15	0	8.3321089	10.9852993
0	30	8.3044928	10.9933532	15	30	8.3330524	10.9850250
1	0	8.3054534	10.9930722	16	0	8.3339959	10.9847507
1	30	8.3064129	10.9927917	16	30	8.3349383	10.9844769
2	0	8.3073723	10.9925111	17	0	8.3358806	10.9842030
2	30	8.3083307	10.9922311	17	30	8.3368219	10.9839297
3	0	8.3092889	10.9919509	18	0	8.3377631	10.9836563
3	30	8.3102460	10.9916714	18	30	8.3387034	10.9833834
4	0	8.3112030	10.9913918	19	0	8.3396435	10.9831103
4	30	8.3121591	10.9911127	19	30	8.3405827	10.9828379
5	0	8.3131150	10 9908334	20	0	8.3415216	10.9825652
5	30	8.3140699	10.9905547	20	30	8 3424597	10.9822933
6	0	8.3150247	10.9902759	21	0	8.3433975	10.9820211
6	30	8.3159784	10.9899978	21	30	8.3443345	10.9817495
7	0	8.3169319	10.9897195	22	0	8.3452713	10.9814777
7	30	8.3178845	10.9894417	22	30	8.3462072	10.9812066
8	0	8.3188370	10 9891638	23	0	8.3471429	10.9809353
8	30	8.3197885	10.9888865	23	30	8.3480776	10.9806646
9	0	8.3207398	10.9886090	24	0	8.3490122	10.9803938
9	30	8.3216902	10.9883322	24	30	8.3499458	10.9801234
10	0	8.3226403	10.9880551	25	0	8.2508794	10.9798530
10	30	8.3235895	10.9877787	25	30	8.3518119	10.9795831
11	0	8.3245386	10.9875022	26	0	8.3527444	10.9793132
11	30	8 3254866	10.9872262	26	30	8.3536759	10.9790437
12	0	8.3264345	10.9869501	27	0	8.3546073	10.9787741
12	30	8.3273814	10.9866746	27	30	8.3555377	10.9785051
13	0	8.3283282	10.9863990	28	0	8.3564679	10.9782359
13	30	8.3292739	10.9861239	28	30	8.3573973	10.9779673
14	0	8.3302195	10.9858487	29	0	8.3583266	10.9776986
14	30	8.3311643	10.9855741	29	30	8.3592548	10.9774304
15	0	8.3321089	10.9852993	30	0	8.3601829	10.9771621

12 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	8.3601829	10.9771621	45	0	8.3877765	10.9692157
30	30	8.3611109	10.9768937	45	30	8.3886880	10.9689542
31	0	8.3620373	10.9766265	46	0	8.3895994	10.9686926
31	30	8.3629634	10.9763592	46	30	8.3905101	10.9684315
32	0	8.3638894	10.9760918	47	0	8.3914205	10.9681701
32	30	8.3648145	10.9758249	47	30	8.3923301	10.9679095
33	0	8.3657394	10.9755578	48	0	8.3932394	10.9676486
33	30	8.3666635	10.9752913	48	30	8.3941480	10.9673884
34	0	8.3675874	10.9750246	49	0	8.3950563	10.9671279
34	30	8.3685104	10.9747586	49	30	8.3959639	10.9668681
35	0	8.3694332	10.9744924	50	0	8.3968712	10.9666080
35	30	8.3703552	10.9742268	50	30	8.3977777	10.9663487
36	0	8.3712770	10.9739610	51	0	8.3986839	10.9660891
36	30	8.3721978	10.9736958	51	30	8.3995895	10.9658301
37	0	8.3731185	10.9734305	52	0	8.4004948	10.9655708
37	30	8.3740383	10.9731657	52	30	8.4013993	10.9653121
38	0	8.3749580	10.9729008	53	0	8.4023037	10.9650533
38	30	8.3758768	10.9726364	53	30	8.4032072	10.9647950
39	0	8.3767954	10.9723718	54	0	8.4041106	10.9645366
39	30	8.3777132	10 9721078	54	30	8.4050130	10.9642788
40	0	8.3786308	10 9718436	55	0	8.4059153	10.9640209
40	30	8.3795475	10.9715801	55	30	8.4068168	10.9637634
41	0	8.3804641	10.9713165	56	0	8.4077182	10.9635058
41	30	8.3813797	10.9710533	56	30	8.4086188	10.9632488
42	0	8.3822952	10 9707900	57	0	8.4095191	10.9629915
42	30	8 3832099	10.9705273	57	30	8.4104187	10.9627349
43	0	8.3841244	10.9702644	58	0	8.4113181	10.9624781
43	30	8.3850381	10.9700021	58	30	8.4122166	10.9622218
44	0	8.3859516	10.9697396	59	0	8.4131150	10.9619654
44	30	8 3868641	10.9694777	59	30	8.4140126	10.9617096
45	0	8.3877765	10 9692157	60	0	8.4149100	10.9614536

13 DEGREES.

Minutes	Seconds	$x^3 - bx = 2$	$x - x^3 = 2$	Minutes	Seconds	$x^3 - bx = 2$	$x - x^3 = 2$
0	0	8.4149100	10.9614536	15	0	8.4416029	10.9538697
0	30	8.4158065	10.9611981	15	30	8.4424851	10.9536201
1	0	8.4167029	10.9609425	16	0	8.4433671	10.9533703
1	30	8.4175986	10.9606874	16	30	8.4442484	10.9531210
2	0	8.4184941	10.9604321	17	0	8.4451296	10.9528716
2	30	8.4193887	10.9601775	17	30	8.4460100	10.9526228
3	0	8.4202832	10.9599228	18	0	8.4468902	10.9523738
3	30	8.4211768	10.9596684	18	30	8.4477695	10.9521253
4	0	8.4220704	10.9594140	19	0	8.4486488	10.9518768
4	30	8.4229631	10.9591601	19	30	8.4495273	10.9516287
5	0	8.4238557	10.9589061	20	0	8.4504056	10.9513804
5	30	8.4247474	10.9586526	20	30	8.4512833	10.9511327
6	0	8.4256389	10.9583989	21	0	8.4521607	10.9508847
6	30	8.4265297	10.9581459	21	30	8.4530374	10.9506374
7	0	8.4274203	10.9578927	22	0	8.4539139	10.9503899
7	30	8.4283101	10.9576399	22	30	8.4547896	10.9501430
8	0	8.4291998	10.9573870	23	0	8.4556651	10.9498959
8	30	8.4300887	10.9571347	23	30	8.4565399	10.9496493
9	0	8.4309774	10.9568822	24	0	8.4574146	10.9494026
9	30	8.4318653	10.9566303	24	30	8.4582886	10.9491564
10	0	8.4327530	10.9563782	25	0	8.4591624	10.9489100
10	30	8.4336399	10.9561267	25	30	8.4600353	10.9486641
11	0	8.4345267	10.9558751	26	0	8.4609082	10.9484182
11	30	8.4354127	10.9556239	26	30	8.4617803	10.9481727
12	0	8.4362985	10.9553725	27	0	8.4626523	10.9479271
12	30	8.4371830	10.9551218	27	30	8.4635234	10.9476820
13	0	8.4380685	10.9548700	28	0	8.4643944	10.9474368
13	30	8.4389526	10.9546204	28	30	8.4652647	10.9471921
14	0	8.4398366	10.9543698	29	0	8.4661341	10.9469472
14	30	8.4407198	10.9541198	29	30	8.4670041	10.9467029
15	0	8.4416029	10.9538697	30	0	8.4678732	10.9464585

13 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$ax - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$ax - x^3 = 2c$
39	0	8.4678738	10.9464585	45	0	8.4937391	10.9392143
39	30	8.4684418	10.9462144	45	30	8.4945944	10.9389758
40	0	8.4690102	10.9459702	46	0	8.4954495	10.9387371
40	30	8.4704777	10.9457267	46	30	8.4963039	10.9384989
42	0	8.4713451	10.9454831	47	0	8.4971582	10.9382606
42	30	8.4722118	10.9452398	47	30	8.4980117	10.9380229
43	0	8.4730784	10.9449964	48	0	8.4988651	10.9377851
43	30	8.4739441	10.9447535	48	30	8.4997178	10.9375476
44	0	8.4748097	10.9445105	49	0	8.5005704	10.9373100
44	30	8.4756746	10.9442680	49	30	8.5014222	10.9370730
45	0	8.4765394	10.9440254	50	0	8.5022739	10 9368359
45	30	8.4774034	10.9437832	50	30	8.5031249	10.9365991
46	0	8.4782673	10.9435409	51	0	8.5039758	10.9363622
46	30	8.4791304	10.9432992	51	30	8.5048259	10.9361259
47	0	8.4799934	10.9430574	52	0	8.5056759	10.9358895
47	30	8.4808556	10.9428160	52	30	8.5065252	10.9356534
48	0	8.4817177	10.9425745	53	0	8.5073744	10.9354172
48	30	8.4825790	10.9423334	53	30	8.5082228	10.9351816
49	0	8.4834402	10.9420922	54	0	8.5090711	10 9349459
49	30	8.4843007	10.9418515	54	30	8.5099187	10.9347107
50	0	8.4851611	10.9416107	55	0	8 5107661	10.9344753
50	30	8.4860208	10.9413704	55	30	8.5116129	10.9342403
51	0	8.4868803	10.9411299	56	0	8.5124596	10.9340052
51	30	8.4877390	10.9408900	56	30	8.5133055	10.9337707
52	0	8.4885975	10.9406499	57	0	8 5141512	10.9335360
52	30	8.4894554	10.9404104	57	30	8.5149963	10.9333017
53	0	8.4903131	10.9401707	58	0	8.5158413	10.9330673
53	30	8.4911701	10.9399315	58	30	8.5166856	10.9328334
54	0	8.4920269	10.9396921	59	0	8.5175298	10.9325994
54	30	8.4928831	10 9394533	59	30	8.5183732	10.9323658
55	0	8.4937391	10.9392143	60	0	8.5192166	10.9321322

14 DEGREES.

Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$	Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$
0	0	8.5192166	10.9321322	15	0	8 5443212	10.9252076
0	30	8.5200591	10.9318991	15	30	8 5451516	10.9249796
1	0	8.5209015	10.9316659	16	0	8.5459819	10.9247515
1	30	8.5217433	10.9314329	16	30	8.5468116	10.9245238
2	0	8.5225851	10.9311999	17	0	8.5476411	10.9242959
2	30	8.5234260	10.9309674	17	30	8.5484700	10.9240686
3	0	8.5242668	10.9307348	18	0	8.5492987	10.9238411
3	30	8.5251069	10.9305027	18	30	8 5501268	10.9236142
4	0	8.5259469	10.9302705	19	0	8.5509547	10.9233871
4	30	8.5267862	10.9300386	19	30	8.5517820	10.9231604
5	0	8.5276255	10.9298067	20	0	8.5526092	10.9229336
5	30	8.5284639	10.9295753	20	30	8.5534357	10.9227073
6	0	8.5293022	10.9293438	21	0	8.5542620	10.9224808
6	30	8.5301399	10.9291127	21	30	8.5550878	10.9222548
7	0	8.5309775	10.9288815	22	0	8.5559134	10.9220286
7	30	8.5318143	10.9286507	22	30	8.5567384	10.9218030
8	0	8.5326510	10.9284198	23	0	8.5575632	10.9215772
8	30	8.5334871	10.9281895	23	30	8.5583873	10 9213519
9	0	8.5343230	10.9279590	24	0	8.5592113	10.9211265
9	30	8 5351583	10 9277289	24	30	8.5600347	10.9209015
10	0	8.5359934	10.9274986	25	0	8.5608580	10.9206764
10	30	8.5368279	10.9272689	25	30	8.5616806	10.9204518
11	0	8.5376622	10.9270390	26	0	8.5625030	10.9202270
11	30	8.5384958	10.9268096	26	30	8 5633249	10.9200027
12	0	8 5393293	10.9265801	27	0	8.5641466	10.9197782
12	30	8.5401621	10.9263511	27	30	8.5649676	10 9195542
13	0	8.5409948	10.9261220	28	0	8.5657886	10.9193302
13	30	8.5418269	10.9258933	28	30	8.5666089	10.9191065
14	0	8.5426588	10.9256644	29	0	8.5674291	10.9188827
14	30	8.5434901	10.9254361	29	30	8.5682487	10.9186593
15	0	8.5443212	10.9252076	30	0	8.5690682	10.9184358

14 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	8.5690682	10.9184358	45	0	8.5934712	10.9118128
30	30	8.5698869	10.9182129	45	30	8.5942789	10.9115947
31	0	8.5707054	10.9179898	46	0	8.5950864	10.9113764
31	30	8.5715235	10.9177671	46	30	8.5958932	10.9111586
32	0	8.5723414	10.9175442	47	0	8.5966999	10.9109407
32	30	8.5731587	10.9173219	47	30	8.5975059	10.9107233
33	0	8.5739758	10.9170994	48	0	8.5983118	10.9105058
33	30	8.5747923	10.9168775	48	30	8.5991172	10.9102886
34	0	8.5756086	10.9166554	49	0	8.5999225	10.9100713
34	30	8.5764243	10.9164337	49	30	8.6007271	10.9098545
35	0	8.5772399	10.9162119	50	0	8.6015316	10.9096376
35	30	8.5780549	10.9159905	50	30	8.6023356	10.9094210
36	0	8.5788698	10.9157690	51	0	8.6031394	10.9092042
36	30	8.5796840	10.9155480	51	30	8.6039426	10.9089880
37	0	8.5804981	10.9153269	52	0	8.6047457	10.9087717
37	30	8.5813116	10.9151062	52	30	8.6055481	10.9085559
38	0	8.5821250	10.9148854	53	0	8.6063504	10.9083400
38	30	8.5829377	10.9146649	53	30	8.6071522	10.9081244
39	0	8.5837504	10.9144444	54	0	8.6079539	10.9079087
39	30	8.5845624	10.9142244	54	30	8.6087549	10.9076935
40	0	8.5853742	10.9140042	55	0	8.6095558	10.9074782
40	30	8.5861855	10.9137845	55	30	8.6103561	10.9072631
41	0	8.5869966	10.9135646	56	0	8.6111564	10.9070480
41	30	8.5878071	10.9133453	56	30	8.6119560	10.9068334
42	0	8.5886174	10.9131258	57	0	8.6127555	10.9066187
42	30	8.5894272	10.9129066	57	30	8.6135544	10.9064044
43	0	8.5902370	10.9126874	58	0	8.6143532	10.9061900
43	30	8.5910460	10.9124686	58	30	8.6151514	10.9059760
44	0	8.5918549	10.9122497	59	0	8.6159495	10.9057619
44	30	8.5926631	10.9120313	59	30	8.6167470	10.9055482
45	0	8.5934712	10.9118128	60	0	8.6175444	10.9053344

15 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$c^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	8.6175444	10.9053344	15	0	8.6412999	10.8989971
0	30	8.6183411	10.9051211	15	30	8.6420863	10.8987883
1	0	8.6191377	10.9049077	16	0	8.6428727	10.8985795
1	30	8.6199338	10.9046940	16	30	8.6436584	10.8983710
2	0	8.6207298	10 9044814	17	0	8.6444441	10.8981625
2	30	8.6215251	10.9042687	17	30	8.6452291	10.8979543
3	0	8.6223203	10.9040559	18	0	8.6460141	10.8977461
3	30	8.6231150	10.9038434	18	30	8.6467985	10.8975383
4	0	8.6239096	10.9036308	19	0	8.6475828	10.8973304
4	30	8.6247036	10.9034188	19	30	8.6483665	10.8971229
5	0	8.6254974	10.9032066	20	0	8.6491501	10.8969153
5	30	8.6262907	10.9029947	20	30	8.6499331	10.8967081
6	0	8.6270840	10.9027828	21	0	8.6507880	10.8965728
6	30	8.6278765	10.9025713	21	30	8.6514984	10.8962938
7	0	8.6286689	10.9023597	22	0	8.6522808	10.8960868
7	30	8.6294609	10.9021485	22	30	8.6530624	10.8958802
8	0	8.6302527	10.9019371	23	0	8.6538440	10.8956736
8	30	8.6310439	10.9017263	23	30	8.6546251	10.8954673
9	0	8.6318349	10.9015153	24	0	8.6554060	10.8952608
9	30	8.6326254	10.9013048	24	30	8.6561864	10.8950548
10	0	8.6334158	10 9010942	25	0	8.6569667	10.8948487
10	30	8.6342057	10.9008839	25	30	8.6577464	10.8946430
11	0	8.6349954	10.9006734	26	0	8.6585260	10.8944372
11	30	8 6357845	10.9004635	26	30	8.6593052	10.8942318
12	0	8.6365735	10.9002535	27	0	8.6600842	10.8940262
12	30	8.6373620	10 9000438	27	30	8.6608625	10.8938211
13	0	8.6381504	10.8998340	28	0	8.6616408	10.8936160
13	30	8.6389381	10.8996247	28	30	8.6624186	10.8934112
14	0	8.6397257	10.8994153	29	0	8.6631962	10.8932062
14	30	8.6405120	10.8992066	29	30	8.6639733	10.8930017
15	0	8.6412990	10.8989971	30	0	8.6647503	10.8927971

15 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	8.6647503	10.8927971	45	0	8.6879073	10.8867313
30	30	8.6655268	10.8925930	45	30	8.6886742	10.8865314
31	0	8.6663031	10.8923887	46	0	8.6894411	10.8863315
31	30	8.6670789	10.8921847	46	30	8.6902072	10.8861320
32	0	8.6678547	10.8919807	47	0	8.6909733	10.8859325
32	30	8.6686298	10.8917770	47	30	8.6917390	10.8857332
33	0	8.6694049	10.8915733	48	0	8.6925046	10.8855338
33	30	8.6701794	10.8913700	48	30	8.6932696	10.8853350
34	0	8.6709538	10.8911666	49	0	8.6940344	10.8851360
34	30	8.6717276	10.8909636	49	30	8.6947988	10.8849374
35	0	8.6725013	10.8907605	50	0	8.6955630	10.8847386
35	30	8.6732746	10.8905578	50	30	8.6963268	10.8845402
36	0	8.6740477	10.8903549	51	0	8.6970905	10.8843417
36	30	8.6748203	10.8901525	51	30	8.6978537	10.8841437
37	0	8.6755927	10.8899499	52	0	8.6986167	10.8839455
37	30	8.6763647	10.8897477	52	30	8.6993792	10.8837478
38	0	8.6771366	10.8895454	53	0	8.7001416	10.8835500
38	30	8.6779079	10.8893437	53	30	8.7009035	10.8833525
39	0	8.6786790	10.8891418	54	0	8.7016653	10.8831549
39	30	8.6794496	10.8889402	54	30	8.7024266	10.8829576
40	0	8.6802202	10.8887386	55	0	8.7031879	10.8827603
40	30	8.6809903	10.8885373	55	30	8.7039486	10.8825634
41	0	8.6817603	10.8883359	56	0	8.7047092	10.8823664
41	30	8.6825297	10.8881349	56	30	8.7054693	10.8821697
42	0	8.6832990	10.8879338	57	0	8.7062293	10.8819729
42	30	8.6840677	10.8877331	57	30	8.7069888	10.8817766
43	0	8.6848364	10.8875324	58	0	8.7077481	10.8815801
43	30	8.6856044	10.8873320	58	30	8.7085069	10.8813841
44	0	8.6863724	10.8871316	59	0	8.7092656	10.8811880
44	30	8.6871399	10.8869315	59	30	8.7100239	10.8809923
45	0	8.6879073	10.8867313	60	0	8.7107820	10.8807964

16 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	8.7107820	10.8807964	15	0	8.7333853	10.8749893
0	30	8.7115397	10.8806009	15	30	8.7341341	10.8747981
1	0	8.7122973	10.8804053	16	0	8.7348827	10.8746067
1	30	8.7130543	10.8802101	16	30	8.7356309	10.8744157
2	0	8.7138112	10.8800148	17	0	8.7363791	10.8742247
2	30	8.7145677	10.8798199	17	30	8.7371267	10.8740339
3	0	8.7153241	10.8796249	18	0	8.7378743	10.8738431
3	30	8.7160800	10.8794302	18	30	8.7386213	10.8736527
4	0	8.7168358	10.8792354	19	0	8.7393682	10.8734622
4	30	8.7175910	10.8790410	19	30	8.7401146	10.8732720
5	0	8.7183462	10.8788466	20	0	8.7408610	10.8730818
5	30	8.7191008	10.8786526	20	30	8.7416069	10.8728919
6	0	8.7198553	10.8784585	21	0	8.7423527	10.8727019
6	30	8.7206094	10.8782646	21	30	8.7430981	10.8725123
7	0	8.7213634	10.8780706	22	0	8.7438433	10.8723225
7	30	8.7221169	10.8778771	22	30	8.7445881	10.8721331
8	0	8.7228703	10.8776835	23	0	8.7453329	10.8719437
8	30	8.7236231	10.8774903	23	30	8.7460770	10.8717546
9	0	8.7243759	10.8772971	24	0	8.7468211	10.8715655
9	30	8.7251281	10.8771041	24	30	8.7475647	10.8713767
10	0	8.7258803	10.8769111	25	0	8.7483082	10.8711878
10	30	8.7266320	10.8767184	25	30	8.7490513	10.8709993
11	0	8.7273836	10.8765256	26	0	8.7497943	10.8708107
11	30	8.7281348	10.8763332	26	30	8.7505367	10.8706225
12	0	8.7288859	10.8761407	27	0	8.7512790	10.8704342
12	30	8.7296364	10.8759486	27	30	8.7520210	10.8702462
13	0	8.7303868	10.8757564	28	0	8.7527629	10.8700581
13	30	8.7311367	10.8755645	28	30	8.7535042	10.8698704
14	0	8.7318866	10.8753726	29	0	8.7542455	10.8696827
14	30	8.7326360	10.8751810	29	30	8.7549863	10.8694953
15	0	8.7333853	10.8749893	30	0	8.7557270	10.8693078

16 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	8.7557270	10.8693078	45	0	8.7778173	10.8637485
30	30	8.7564672	10.8691206	45	30	8.7785494	10.8635654
31	0	8.7572074	10.8689334	46	0	8.7792813	10.8633821
31	30	8.7579471	10.8687465	46	30	8.7800127	10.8631993
32	0	8.7586867	10.8685595	47	0	8.7807441	10.8630165
32	30	8.7594258	10.8683728	47	30	8.7814751	10.8628339
33	0	8.7601649	10.8681861	48	0	8.7822060	10.8626512
33	30	8.7609035	10.8679997	48	30	8.7829364	10.8624688
34	0	8.7616421	10.8678133	49	0	8.7836668	10.8622864
34	30	8.7623800	10.8676272	49	30	8 7843967	10 8621043
35	0	8.7631179	10.8674411	50	0	8.7851266	10.8619222
35	30	8.7638554	10.8672554	50	30	8.7858558	10.8617404
36	0	8.7645927	10.8670695	51	0	8.7865851	10.8615587
36	30	8.7653297	10.8668839	51	30	8.7873139	10.8613771
37	0	8.7660666	10.8666982	52	0	8.7880427	10.8611955
37	30	8.7668030	10.8665130	52	30	8.7887710	10.8610142
38	0	8.7675393	10.8663277	53	0	8.7894992	10.8608328
38	30	8.7682751	10 8661427	53	30	8.7902270	10.8606518
39	0	8.7690108	10.8659576	54	0	8.7909547	10.8604707
39	30	8.7697461	10.8657729	54	30	8.7916820	10.8602900
40	0	8.7704813	10.8655881	55	0	8.7924092	10.8601092
40	30	8.7712160	10.8654036	55	30	8.7931359	10.8599287
41	0	8.7719507	10.8652191	56	0	8.7938625	10.8597481
41	30	8.7726849	10.8650349	56	30	8.7945887	10.8595679
42	0	8.7734190	10.8648506	57	0	8.7953149	10 8593877
42	30	8.7741526	10.8646666	57	30	8.7960405	10.8592077
43	0	8.7748862	10 8644826	58	0	8.7967661	10.8590277
43	30	8.7756193	10.8642991	58	30	8.7974912	10.8588480
44	0	8.7763522	10.8641154	59	0	8.7982163	10.8586683
44	30	8.7770848	10.8639320	59	30	8.7989409	10.8584889
45	0	8.7778173	10.8637485	60	0	8.7996654	10.8583094

17 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	8.7996654	10.8583094	15	0	8.8212805	10.8529881
0	30	8.8003896	10.8581302	15	30	8.8219970	10.8528128
1	0	8.8011137	10.8579509	16	0	8.8227135	10.8526375
1	30	8.8018373	10.8577721	16	30	8.8234296	10.8524624
2	0	8.8025607	10.8575931	17	0	8.8241456	10.8522872
2	30	8.8032839	10.8574145	17	30	8.8248610	10.8521124
3	0	8.8040069	10.8572357	18	0	8.8255765	10.8519377
3	30	8.8047295	10.8570573	18	30	8.8262915	10.8517631
4	0	8.8054520	10.8568788	19	0	8.8270065	10.8515885
4	30	8.8061740	10.8567008	19	30	8.8277209	10.8514143
5	0	8.8068959	10.8565227	20	0	8.8284353	10.8512401
5	30	8.8076174	10.8563448	20	30	8.8291494	10.8510660
6	0	8.8083389	10.8561669	21	0	8.8298634	10.8508918
6	30	8.8090600	10.8559892	21	30	8.8305769	10.8507181
7	0	8.8097811	10.8558115	22	0	8.8312904	10.8505444
7	30	8.8105016	10.8556342	22	30	8.8320034	10.8503708
8	0	8.8112220	10.8554568	23	0	8.8327165	10.8501973
8	30	8.8119420	10.8552798	23	30	8.8334290	10.8500240
9	0	8.8126619	10.8551027	24	0	8.8341415	10.8498507
9	30	8.8133814	10.8549258	24	30	8.8348536	10.8496778
10	0	8.8141009	10.8547489	25	0	8.8355655	10.8495047
10	30	8.8148199	10.8545733	25	30	8.8362772	10.8493320
11	0	8.8155389	10.8543957	26	0	8.8369887	10.8491591
11	30	8.8162574	10.8542194	26	30	8.8376997	10.8489867
12	0	8.8169758	10.8540430	27	0	8.8384107	10.8488143
12	30	8.8176938	10.8538670	27	30	8.8391214	10.8486420
13	0	8.8184117	10.8536909	28	0	8.8398320	10.8484696
13	30	8.8191292	10.8535150	28	30	8.8405421	10.8482977
14	0	8.8198467	10.8533391	29	0	8.8412521	10.8481257
14	30	8.8205636	10.8531636	29	30	8.8419618	10.8479540
15	0	8.8212805	10.8529881	30	0	8.8426714	10.8477822

17 DEGREES.

Minutes	Seconds	$x^2-bx=2c$	$bx-x^2=2c$	Minutes	Seconds	$x^2-bx=2c$	$bx-x^2=2c$
30	0	8.8426714	10.8477822	45	0	8.8638462	10.8426898
30	30	8.8433805	10.8476107	45	30	8.8645483	10.8425221
31	0	8.8440896	10.8474392	46	0	8.8652503	10.8423543
31	30	8.8447984	10.8472680	46	30	8.8659520	10.8421868
32	0	8.8455070	10.8470966	47	0	8.8666537	10.8420193
32	30	8.8462153	10.8469257	47	30	8.8673548	10.8418520
33	0	8.8469234	10.8467546	48	0	8.8680560	10.8416848
33	30	8.8476311	10.8465839	48	30	8.8687567	10.8415177
34	0	8.8483388	10.8464132	49	0	8.8694575	10.8413507
34	30	8.8490461	10.8462427	49	30	8.8701577	10.8411839
35	0	8.8497533	10.8460721	50	0	8.8708580	10.8410172
35	30	8.8504601	10.8459019	50	30	8.8715577	10.8408507
36	0	8.8511668	10.8457316	51	0	8.8722574	10.8406842
36	30	8.8518731	10.8455617	51	30	8.8729568	10.8405180
37	0	8.8525793	10.8453917	52	0	8.8736561	10.8403517
37	30	8.8532852	10.8452220	52	30	8.8743551	10.8401857
38	0	8.8539910	10.8450522	53	0	8.8750540	10.8400196
38	30	8.8546964	10.8448828	53	30	8.8757524	10.8398538
39	0	8.8554017	10.8447133	54	0	8.8764508	10.8396880
39	30	8.8561066	10.8445440	54	30	8.8771488	10.8395226
40	0	8.8568115	10.8443747	55	0	8.8778467	10.8393571
40	30	8.8575159	10.8442057	55	30	8.8785443	10.8391917
41	0	8.8582203	10.8440367	56	0	8.8792419	10.8390263
41	30	8.8589242	10.8438680	56	30	8.8799390	10.8388614
42	0	8.8596281	10.8436993	57	0	8.8806359	10.8386963
42	30	8.8603316	10.8435308	57	30	8.8813326	10.8385316
43	0	8.8610351	10.8433623	58	0	8.8820292	10.8383668
43	30	8.8617381	10.8431941	58	30	8.8827254	10.8382022
44	0	8.8624411	10.8430259	59	0	8.8834216	10.8380376
44	30	8.8631437	10.8428579	59	30	8.8841174	10.8378734
45	0	8.8638462	10.8426898	60	0	8.8848130	10.8377090

18 DEGREES.

Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$	Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$
0	0	8.8848130	10.8377090	15	0	8.9056519	10.8329099
0	30	8.8855084	10.8375450	15	30	8.9062687	10.8326775
1	0	8.8862037	10.8373809	16	0	8.9069574	10.8325170
1	30	8.8868986	10.8372170	16	30	8.9076458	10.8323568
2	0	8.8875935	10.8370531	17	0	8.9083341	10.8321965
2	30	8.8882879	10.8368895	17	30	8.9090220	10.8320366
3	0	8.8889823	10.8367259	18	0	8.9097099	10.8318767
3	30	8.8896763	10.8365627	18	30	8.9103974	10.8317170
4	0	8.8903702	10.8363994	19	0	8.9110848	10.8315572
4	30	8.8910637	10.8362363	19	30	8.9117719	10.8313977
5	0	8.8917572	10.8360732	20	0	8.9124590	10.8312382
5	30	8.8924503	10.8359103	20	30	8.9131457	10.8310789
6	0	8.8931434	10.8357474	21	0	8.9138324	10.8309196
6	30	8.8938361	10.8355849	21	30	8.9145186	10.8307606
7	0	8.8945287	10.8354223	22	0	8.9152048	10.8306016
7	30	8.8952209	10.8352599	22	30	8.9158906	10.8304430
8	0	8.8959131	10.8350975	23	0	8.9165762	10.8302842
8	30	8.8966050	10.8349354	23	30	8.9172617	10.8301257
9	0	8.8972968	10.8347732	24	0	8.9179471	10.8299671
9	30	8.8979881	10.8346113	24	30	8.9186320	10.8298088
10	0	8.8986794	10.8344494	25	0	8.9193170	10.8296506
10	30	8.8993704	10.8342878	25	30	8.9200015	10.8295925
11	0	8.9000613	10.8341261	26	0	8.9206860	10.8293344
11	30	8.9007518	10.8339648	26	30	8.9213702	10.8291766
12	0	8.9014422	10.8338034	27	0	8.9220543	10.8290187
12	30	8.9021323	10.8336423	27	30	8.9227370	10.8288612
13	0	8.9028223	10.8334811	28	0	8.9234217	10.8287037
13	30	8.9035119	10.8333201	28	30	8.9241051	10.8285463
14	0	8.9042016	10.8331592	29	0	8.9247884	10.8283888
14	30	8.9048907	10.8329985	29	30	8.9254713	10.8282317
15	0	8.9056519	10.8329099	30	0	8.9261542	10.8280746

18 DEGREES.

Minutes	Seconds	$x^3 - bx = ac$	$bx - x^3 = ac$	Minutes	Seconds	$x^3 - bx = ac$	$bx - x^3 = ac$
30	0	8.9261542	10.8280746	45	0	8.9465431	10.8234179
30	30	8.9268366	10.8279178	45	30	8.9472194	10.8232646
31	0	8.9275190	10.8277610	46	0	8.9478957	10.8231013
31	30	8.9282011	10.8276043	46	30	8.9485718	10.8229582
32	0	8.9288832	10.8274476	47	0	8.9492478	10.8228050
32	30	8 9295649	10.8272913	47	30	8.9499235	10.8226521
33	0	8.9302465	10.8271349	48	0	8.9505992	10.8224992
33	30	8.9309278	10.8269788	48	30	8.9512744	10.8223466
34	0	8.9316090	10.8268226	49	0	8.9519496	10.8221940
34	30	8.9322898	10.8266666	49	30	8.9526245	10.8220415
35	0	8.9329707	10.8265107	50	0	8.9532994	10.8218890
35	30	8.9336512	10.8263550	50	30	8.9539739	10.8217369
36	0	8.9343316	10.8261992	51	0	8.9546483	10.8215847
36	30	8.9350116	10.8260438	51	30	8.9553223	10.8214327
37	0	8.9356916	10.8258884	52	0	8.9559964	10.8212808
37	30	8.9363712	10.8257332	52	30	8.9566701	10.8211291
38	0	8.9370508	10.8255780	53	0	8.9573437	10.8209773
38	30	8.9377300	10.8254230	53	30	8.9580170	10.8208258
39	0	8.9384092	10.8252680	54	0	8 9586903	10.8206743
39	30	8.9390881	10.8251133	54	30	8.9593633	10.8205231
40	0	8.9397669	10.8249585	55	0	8.9600362	10.8203718
40	30	8.9404453	10.8248039	55	30	8.9607086	10.8202208
41	0	8.9411238	10.8246494	56	0	8.9613810	10.8200698
41	30	8.9418017	10.8244951	56	30	8.9620532	10.8199190
42	0	8.9424797	10 8243409	57	0	8.9627254	10.8197682
42	30	8.9431573	10.8241869	57	30	8.9633972	10.8196176
43	0	8.9438348	10.8240328	58	0	8.9640689	10.8194669
43	30	8.9445122	10.8238790	58	30	8.9647403	10.8193167
44	0	8.9451894	10.8237250	59	0	8.9654116	10 8191664
44	30	8.9458663	10.8235715	59	30	8.9660826	10.8190162
45	0	8 9465431	10.8234179	60	0	8.9667536	10.8188660

19 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	8.9667536	10.8188660	15	0	8.9867926	10.8144178
0	30	8.9674242	10.8187162	15	30	8.9874576	10.8142714
1	0	8.9680948	10.8185664	16	0	8.9881225	10.8141249
1	30	8.9687650	10.8184168	16	30	8.9887872	10.8139788
2	0	8.9694351	10.8182671	17	0	8.9894518	10.8138326
2	30	8.9701051	10.8181177	17	30	8.9901161	10.8136865
3	0	8.9707749	10.8179681	18	0	8.9907804	10.8135404
3	30	8.9714444	10.8178190	18	30	8.9914443	10.8133947
4	0	8.9721138	10.8176698	19	0	8.9921082	10.8132490
4	30	8.9727829	10.8175209	19	30	8.9927717	10.8131035
5	0	8.9734519	10.8173719	20	0	8.9934352	10.8129580
5	30	8.9741206	10.8172232	20	30	8.9940984	10.8128126
6	0	8.9747893	10.8170745	21	0	8.9947616	10.8126672
6	30	8.9754576	10.8169260	21	30	8.9954245	10.8125221
7	0	8.9761259	10.8167775	22	0	8.9960873	10.8123769
7	30	8.9767940	10.8166292	22	30	8.9967498	10.8122322
8	0	8.9774620	10.8164808	23	0	8.9974121	10.8120873
8	30	8.9781296	10.8163328	23	30	8.9980743	10.8119427
9	0	8.9787972	10 8161848	24	0	8.9987364	10.8117980
9	30	8 9794644	10.8160370	24	30	8.9993982	10.8116536
10	0	8.9801316	10.8158892	25	0	9.0000599	10.8115091
10	30	8.9807984	10.8157416	25	30	9.0007213	10.8113649
11	0	8.9814652	10.8155940	26	0	9.0013827	10.8112207
11	30	8.9821317	10.8154467	26	30	9.0020438	10.8110768
12	0	8.9827981	10.8152993	27	0	9.0027048	10.8109328
12	30	8 9834642	10.8151522	27	30	9.0033655	10.8107891
13	0	8.9841303	10.8150051	28	0	9.0040261	10,8106453
13	30	8.9847961	10.8148581	28	30	9.0046864	10.8105018
14	0	8.9854619	10.8147111	29	0	9.0053467	10.8103583
14	30	8.9861273	10.8145645	29	30	9.0060067	10.8102151
15	0	8.9867926	10 8144178	30	0	9.0066666	10.8100718

19 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.0066666	10.8100718	45	0	9.0263821	10.8058269
30	30	9.0073262	10.8099288	45	30	9.0270365	10.8056871
31	0	9.0079858	10.8097858	46	0	9.0276910	10.8055474
31	30	9.0086451	10.8096429	46	30	9.0283451	10.8054079
32	0	9.0093044	10.8095000	47	0	9.0289992	10.8052684
32	30	9.0099633	10.8093573	47	30	9.0296530	10.8051292
33	0	9.0106223	10.8092147	48	0	9.0303067	10.8049899
33	30	9.0112808	10.8090724	48	30	9.0309602	10.8048508
34	0	9.0119393	10.8089301	49	0	9.0316137	10.8047117
34	30	9.0125975	10.8087879	49	30	9.0322667	10.8045729
35	0	9.0132557	10.8086457	50	0	9.0329197	10.8044341
35	30	9.0139136	10.8085038	50	30	9.0335725	10.8042955
36	0	9.0145714	10.8083618	51	0	9.0342253	10.8041569
36	30	9.0152290	10.8082200	51	30	9.0348777	10.8040185
37	0	9.0158866	10.8080782	52	0	9.0355301	10.8038801
37	30	9.0165438	10.8079368	52	30	9.0361823	10.8037419
38	0	9.0172009	10.8077953	53	0	9.0368345	10.8036037
38	30	9.0178577	10.8076541	53	30	9.0374862	10.8034658
39	0	9.0185145	10.8075129	54	0	9.0381379	10.8033279
39	30	9.0191710	10.8073718	54	30	9.0387894	10.8031904
40	0	9.0198275	10.8072307	55	0	9.0394408	10.8030524
40	30	9.0204837	10.8070899	55	30	9.0400919	10.8029149
41	0	9.0211398	10.8069490	56	0	9.0407430	10.8027774
41	30	9.0217956	10.8068084	56	30	9.0413938	10.8026402
42	0	9.0224514	10.8066678	57	0	9.0420445	10.8025029
42	30	9.0231068	10.8065274	57	30	9.0426950	10.8023658
43	0	9.0237623	10.8063871	58	0	9.0433455	10.8022287
43	30	9.0244175	10.8062469	58	30	9.0439956	10.8020918
44	0	9.0250726	10.8061066	59	0	9.0446458	10.8019550
44	30	9.0257274	10.8059668	59	30	9.0452956	10.8018184
45	0	9.0263821	10.8058269	60	0	9.0459453	10.8016817

20 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.0459453	10.8016817	15	0	9.0653621	10.7976357
0	30	9.0465948	10.8015454	15	30	9.0660068	10.7975026
1	0	9.0472442	10.8014090	16	0	9.0666515	10.7973695
1	30	9.0478934	10.8012728	16	30	9.0672958	10.7972366
2	0	9.0485426	10.8011366	17	0	9.0679402	10.7971038
2	30	9.0491914	10.8010006	17	30	9.0685833	10.7969711
3	0	9.0498402	10.8008646	18	0	9.0692284	10.7968384
3	30	9.0504887	10.8007289	18	30	9.0698721	10.7967059
4	0	9.0511372	10.8005932	19	0	9.0705158	10.7965734
4	30	9.0517853	10.8004577	19	30	9.0711594	10.7964412
5	0	9.0524334	10.8003222	20	0	9.0718029	10.7963089
5	30	9.0530813	10.8001869	20	30	9.0724460	10.7961768
6	0	9.0537292	10.8000516	21	0	9.0730892	10.7960448
6	30	9.0543767	10.7999165	21	30	9.0737320	10.7959130
7	0	9.0550242	10.7997814	22	0	9.0743748	10.7957812
7	30	9.0556715	10.7996465	22	30	9.0750174	10.7956496
8	0	9.0563188	10.7995116	23	0	9.0756599	10.7955179
8	30	9.0569656	10.7993770	23	30	9.0763022	10.7953866
9	0	9.0576124	10.7992424	24	0	9.0769444	10.7952552
9	30	9.0582591	10.7991079	24	30	9.0775863	10.7951241
10	0	9.0589058	10.7989734	25	0	9.0782281	10.7949929
10	30	9.0595520	10.7988392	25	30	9.0788698	10.7948620
11	0	9.0601982	10.7987050	26	0	9.0795114	10.7947310
11	30	9.0608442	10.7985710	26	30	9.0801527	10.7946003
12	0	9.0614902	10.7984370	27	0	9.0807940	10.7944696
12	30	9.0621358	10.7983032	27	30	9.0814351	10.7943391
13	0	9.0627815	10.7981695	28	0	9.0820761	10.7942085
13	30	9.0634268	10.7980360	28	30	9.0827168	10.7940782
14	0	9.0640720	10.7979024	29	0	9.0833575	10.7939479
14	30	9.0647171	10.7977691	29	30	9.0839980	10.7938178
15	0	9.0653621	10.7976357	30	0	9.0846385	10.7936877

20 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.0846385	10.7936877	45	0	9.1037800	10.7898368
30	30	9.0852786	10.7935578	45	30	9.1044157	10.7897103
31	0	9.0859187	10.7934279	46	0	9.1050513	10.7895837
31	30	9.0865585	10.7932983	46	30	9.1056868	10.7894572
32	0	9.0871983	10.7931687	47	0	9.1063223	10.7893307
32	30	9.0878378	10.7930392	47	30	9.1069575	10.7892045
33	0	9.0884774	10.7929098	48	0	9.1075927	10.7890783
33	30	9.0891166	10.7927806	48	30	9.1082275	10.7889523
34	0	9.0897558	10.7926514	49	0	9.1088623	10.7888263
34	30	9.0903947	10.7925223	49	30	9 1094969	10.7887005
35	0	9.0910337	10.7923933	50	0	9.1101315	10.7885747
35	30	9.0916723	10.7922645	50	30	9.1107658	10.7884492
36	0	9.0923109	10.7921357	51	0	9.1114001	10.7883237
36	30	9.0929492	10.7920072	51	30	9.1120341	10.7881983
37	0	9.0935875	10.7918787	52	0	9.1126681	10.7880729
37	30	9.0942255	10.7917503	52	30	9.1133018	10.7879478
38	0	9.0948636	10 7916220	53	0	9.1139355	10.7878227
38	30	9.0955014	10 7914938	53	30	9.1145690	10.7876978
39	0	9.0961392	10.7913656	54	0	9.1152024	10.7875728
39	30	9.0967767	10.7912377	54	30	9.1158357	10.7874481
40	0	9.0974141	10.7911097	55	0	9.1164689	10.7873233
40	30	9.0980512	10.7909820	55	30	9.1171018	10.7871988
41	0	9 0986884	10.7908544	56	0	9.1177347	10.7870743
41	30	9 0993253	10.7907269	56	30	9.1183673	10.7869501
42	0	9.0999621	10.7905993	57	0	9.1189998	10 7868258
42	30	9.1005987	10.7904721	57	30	9.1196322	10.7867018
43	0	9 1012352	10.7903448	58	0	9.1202645	10.7865777
43	30	9.1018716	10.7902178	58	30	9.1208966	10.7864538
44	0	9.1025079	10.7900907	59	0	9.1215287	10.7863299
44	30	9.1031440	10.7899638	59	30	9.1221605	10.7862063
45	0	9.1037800	10.7898368	60	0	9.1227922	10.7860726

21 DEGREES.

Minutes	Seconds	$x^3-bx=2a$	$bx-x^3=2a$	Minutes	Seconds	$x^3-bx=2a$	$bx-x^3=2a$
0	0	9.1227922	10.7860726	15	0	9.1416809	10.7824241
0	30	9.1234238	10.7859592	15	30	9.1423084	10.7823038
1	0	9.1240553	10.7858357	16	0	9.1429359	10.7821835
1	30	9.1246865	10.7857125	16	30	9.1435631	10.7820635
2	0	9.1253177	10.7855893	17	0	9.1441903	10.7819435
2	30	9.1259487	10.7854663	17	30	9.1448172	10.7818236
3	0	9.1265797	10.7853433	18	0	9.1454442	10.7817038
3	30	9.1272104	10.7852204	18	30	9.1460708	10.7815842
4	0	9.1278412	10.7850976	19	0	9.1466975	10.7814647
4	30	9.1284716	10.7849750	19	30	9.1473240	10.7813452
5	0	9.1291020	10.7848524	20	0	9.1479505	10.7812257
5	30	9.1297321	10.7847301	20	30	9.1485767	10.7811065
6	0	9.1303622	10.7846078	21	0	9.1492029	10.7809873
6	30	9.1309922	10.7844856	21	30	9.1498288	10.7808684
7	0	9.1316221	10.7843633	22	0	9.1504546	10.7807494
7	30	9.1322516	10.7842414	22	30	9.1510803	10.7806307
8	0	9.1328812	10.7841196	23	0	9.1517059	10.7805119
8	30	9.1335106	10.7839978	23	30	9.1523313	10.7803933
9	0	9.1341400	10.7838760	24	0	9.1529567	10.7802747
9	30	9.1347691	10.7837545	24	30	9.1535820	10.7801564
10	0	9.1353981	10.7836329	25	0	9.1542071	10.7800379
10	30	9.1360269	10.7835117	25	30	9.1548320	10.7799198
11	0	9.1366556	10.7833904	26	0	9.1554569	10.7798017
11	30	9.1372842	10.7832692	26	30	9.1560816	10.7796838
12	0	9.1379129	10.7831481	27	0	9.1567062	10.7795658
12	30	9.1385411	10.7830273	27	30	9.1573305	10.7794481
13	0	9.1391692	10.7829064	28	0	9.1579549	10.7793305
13	30	9.1397973	10.7827857	28	30	9.1585790	10.7792130
14	0	9.1404254	10.7826650	29	0	9.1592031	10.7790955
14	30	9.1410531	10.7825445	29	30	9.1598270	10.7789782
15	0	9.1416809	10.7824241	30	0	9.1604509	10.7788609

21 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.1604509	10.7788609	45	0	9.1791078	10.7753922
30	30	9.1610745	10.7787437	45	30	9.1797277	10.7752785
31	0	9.1616982	10.7786266	46	0	9.1803476	10 7751644
31	30	9.1623216	10.7785098	46	30	9.1809673	10.7750507
32	0	9.1629449	10.7783929	47	0	9.1815870	10.7749370
32	30	9.1635680	10.7782762	47	30	9.1822064	10.7748234
33	0	9.1641912	10.7781596	48	0	9.1828259	10.7747099
33	30	9.1648141	10.7780431	48	30	9.1834452	10 7745966
34	0	9.1654370	10.7779266	49	0	9.1840644	10.7744832
34	30	9.1660596	10.7778104	49	30	9.1846834	10 7743702
35	0	9.1666822	10.7776942	50	0	9.1853023	10.7742571
35	30	9.1673045	10.7775781	50	30	9.1859210	10.7741442
36	0	9.1679269	10.7774621	51	0	9.1865398	10.7740314
36	30	9.1685491	10.7773463	51	30	9.1871583	10.7739187
37	0	9.1691712	10.7772304	52	0	9.1877768	10.7738060
37	30	9.1697931	10.7771147	52	30	9.1883951	10.7736935
38	0	9.1704151	10.7769991	53	0	9.1890134	10.7735810
38	30	9.1710367	10.7768837	53	30	9 1896315	10.7734687
39	0	9.1716583	10.7767683	54	0	9.1902496	10.7733564
39	30	9.1722797	10.7766531	54	30	9.1908674	10.7732444
40	0	9.1729011	10.7765379	55	0	9.1904851	10 7741323
40	30	9.1735222	10.7764230	55	30	9.1911027	10.7740205
41	0	9.1741433	10.7763081	56	0	9.1927203	10.7729087
41	30	9.1747642	10.7761932	56	30	9.1933376	10.7727970
42	0	9.1753852	10.7760784	57	0	9 1939550	10.7726854
42	30	9.1760059	10.7759639	57	30	9.1945721	10.7725739
43	0	9.1776265	10.7758493	58	0	9.1951893	10.7724625
43	30	9.1772469	10.7757349	58	30	9.1958061	10.7723513
44	0	9.1778674	10 7756206	59	0	9.1964229	10.7722401
44	30	9.1784876	10.7755064	59	30	9.1970397	10.7721291
45	0	9.1791078	10.7753922	60	0	9.1976564	10.7720180

22 DEGREES.

Minutes	Seconds	$x^2 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^2 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.1976564	10.7720180	15	0	9.2161015	10.7687379
0	30	9.1982728	10.7719072	15	30	9.2167146	10.7686302
1	0	9.1988892	10 7717964	16	0	9 2173277	10.7685225
13	0	9.1995054	10.7716858	16	30	9.2179406	10 7684150
2	0	9.2001216	10.7716752	17	0	9 2185535	10.7683075
2	30	9.2007375	10.7714649	17	30	9 2191661	10.7682003
3	0	9.2013534	10.7713546	18	0	9 2197787	10.7680931
3	30	9.2019692	10.7712444	18	30	9.2203912	10.7679860
4	0	9.2025850	10.7711342	19	0	9.2210037	10.7678789
4	30	9.2032004	10.7710242	19	30	9.2216159	10.7677721
5	0	9.2038159	10.7709143	20	0	9.2222280	10.7676652
5	30	9.2044313	10.7708045	20	30	9.2228400	10.7675586
6	0	9.2050466	10.7706946	21	0	9.2234520	10.7674520
6	30	9.2056617	10.7705851	21	30	9.2240638	10.7673456
7	0	9.2062767	10.7704755	22	0	9.2246755	10.7672391
7	30	9 2068916	10.7703662	22	30	9.2252871	10.7671329
8	0	9.2075064	10.7702568	23	0	9.2258987	10.7670267
8	30	9.2081210	10.7701478	23	30	9.2265100	10.7669208
9	0	9.2087355	10.7700387	24	0	9.2271212	10.7668148
9	30	9.2093500	10.7699298	24	30	9.2277324	10.7667090
10	0	9.2099644	10.7698208	25	0	9.2283436	10 7666032
10	30	9.2105785	10.7697121	25	30	9.2289545	10 7664975
11	0	9.2111927	10.7696035	26	0	9.2295655	10.7663919
11	30	9 2118067	10.7694949	26	30	9.2301762	10.7662866
12	0	9.2124207	10.7693863	27	0	9.2307868	10.7661812
12	30	9.2130344	10.7692780	27	30	9 2313974	10.7660760
13	0	9.2136481	10.7691697	28	0	9.2320079	10.7659707
13	30	9.2142616	10.7690616	28	30	9.2326182	10.7658658
14	0	9.2148751	10.7689535	29	0	9.2332285	10.7657609
14	30	9.2154883	10.7688457	29	30	9.2338385	10.7656561
15	0	9.2161015	10.7687379	30	0	9.2344486	10.7655514

22 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.2344486	10.7655514	45	0	9.2527021	10.7624585
30	30	9.2350585	10.7654469	45	30	9.2533089	10.7623571
31	0	9.2356683	10.7653423	46	0	9.2539157	10.7622557
31	30	9.2362780	10.7652380	46	30	9.2545224	10.7621544
32	0	9.2368877	10.7651337	47	0	9.2551291	10.7620531
32	30	9.2374971	10.7650295	47	30	9.2557355	10.7619521
33	0	9.2381066	10.7649254	48	0	9.2563419	10.7618511
33	30	9.2387158	10.7648214	48	30	9.2569482	10.7617502
34	0	9.2393251	10.7647175	49	0	9.2575545	10.7616493
34	30	9.2399342	10.7646138	49	30	9.2581606	10.7615488
35	0	9.2405432	10.7645100	50	0	9.2587666	10.7614482
35	30	9.2411521	10.7644065	50	30	9.2593724	10.7613478
36	0	9.2417610	10.7643030	51	0	9.2599783	10.7612475
36	30	9.2423696	10.7641996	51	30	9.2605839	10.7611473
37	0	9.2429783	10.7640963	52	0	9.2611896	10.7610472
37	30	9.2435867	10.7639933	52	30	9.2617951	10.7609471
38	0	9.2441951	10.7638903	53	0	9.2624007	10.7608471
38	30	9.2448032	10.7637873	53	30	9.2630059	10.7607473
39	0	9.2454116	10.7636844	54	0	9.2636112	10.7606476
39	30	9.2460197	10.7635817	54	30	9.2642162	10.7605480
40	0	9.2466278	10.7634790	55	0	9.2648213	10.7604485
40	30	9.2472355	10.7633765	55	30	9.2654263	10.7603491
41	0	9.2478433	10.7632741	56	0	9.2660312	10.7602496
41	30	9.2484510	10.7631718	56	30	9.2666359	10.7601505
42	0	9.2490587	10.7630695	57	0	9.2672406	10.7600514
42	30	9.2496661	10.7629675	57	30	9.2678452	10.7599524
43	0	9.2502735	10.7628655	58	0	9.2684498	10.7598534
43	30	9.2508808	10.7627636	58	30	9.2690541	10.7597547
44	0	9.2514881	10.7626617	59	0	9.2696584	10.7596560
44	30	9.2520951	10.7625601	59	30	9.2702625	10.7595575
45	0	9.2527021	10.7624585	60	0	9.2708666	10.7594590

23 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.2708666	10.7594590	15	0	9.2889470	10.7565530
0	30	9.2714706	10.7593606	15	30	9.2895483	10.7564577
1	0	9.2720747	10.7592623	16	0	9.2901496	10.7563624
1	30	9.2726784	10.7591642	16	30	9.2907507	10.7562675
2	0	9.2732821	10.7590661	17	0	9.2913517	10.7561725
2	30	9.2738858	10.7589682	17	30	9.2919525	10.7560777
3	0	9.2744894	10.7588702	18	0	9.2925534	10.7559830
3	30	9.2750928	10.7587726	18	30	9.2931542	10.7558884
4	0	9.2756961	10.7586749	19	0	9.2937549	10.7557937
4	30	9.2762994	10.7585774	19	30	9.2943555	10.7556993
5	0	9.2769027	10.7584799	20	0	9.2949561	10.7556049
5	30	9.2775056	10.7583826	20	30	9.2955564	10.7555108
6	0	9.2781086	10.7582854	21	0	9.2961567	10.7554167
6	30	9.2787115	10.7581883	21	30	9.2967569	10.7553227
7	0	9.2793142	10.7580912	22	0	9.2973571	10.7552287
7	30	9.2799171	10.7579943	22	30	9.2979572	10.7551350
8	0	9.2805198	10.7578974	23	0	9.2985572	10.7550412
8	30	9.2811223	10.7578007	23	30	9.2991570	10.7549476
9	0	9.2817248	10.7577040	24	0	9.2997569	10.7548541
9	30	9.2823271	10.7576077	24	30	9.3003566	10.7547608
10	0	9.2829293	10.7575113	25	0	9.3009562	10.7546674
10	30	9.2835314	10.7574150	25	30	9.3015557	10.7545743
11	0	9.2841336	10.7573188	26	0	9.3021552	10.7544812
11	30	9.2847355	10.7572227	26	30	9.3027545	10.7543883
12	0	9.2853375	10.7571267	27	0	9.3033538	10.7542954
12	30	9.2859393	10.7570309	27	30	9.3039531	10.7542027
13	0	9.2865410	10.7569350	28	0	9.3045523	10.7541099
13	30	9.2871426	10.7568394	28	30	9.3051512	10.7540174
14	0	9.2877442	10.7567438	29	0	9.3057502	10.7539250
14	30	9.2883456	10.7566484	29	30	9.3063491	10.7538327
15	0	9.2889470	10.7565530	30	0	9.3069479	10.7537403

23 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$x - x^3 = 2c$
30	0	9.3069479	10 7537403	45	0	9.3248737	10.7510213
30	30	9.3075466	10.7536482	45	30	9.3254700	10 7509324
31	0	9.3081453	10.7535561	46	0	9.3260662	10.7508434
31	30	9.3087438	10.7534642	46	30	9.3266623	10.7507547
32	0	9.3093423	10.7533723	47	0	9.3272584	10.7506660
32	30	9 3099407	10.7532807	47	30	9.3278542	10.7505774
33	0	9.3105390	10.7531890	48	0	9.3284501	10.7504889
33	30	9 3111371	10 7530975	48	30	9.3290460	10.7504006
34	0	9.3117353	10.7530061	49	0	9.3296418	10.7503122
34	30	9 3123333	10.7529149	49	30	9.3302374	10.7502240
35	0	9.3129313	10.7528237	50	0	9.3308[illegible]	10.7501359
35	30	9.3135291	10.7527325	50	30	9.3314285	10.7500479
36	0	9.3141271	10.7526415	51	0	9.3320240	10.7499600
36	30	9.3147247	10.7525507	51	30	9.3326193	10.7498723
37	0	9.3153223	10.7524599	52	0	9.3332146	10.7497846
37	30	9.3159198	10.7523692	52	30	9.3338098	10.7496972
38	0	9.3165174	10.7522786	53	0	9.3344049	10.7496097
38	30	9.3171147	10.7521881	53	30	9.3349999	10.7495223
39	0	9 3177121	10.7520977	54	0	9.3355950	10.7494350
39	30	9.3183093	10.7520075	54	30	9.3361899	10.7493479
40	0	9.3189065	10.7519173	55	0	9.3367848	10.7492608
40	30	9.3195035	10.7518273	55	30	9.3373794	10.7491740
41	0	9.3201005	10.7517373	56	0	9.3379740	10.7490872
41	30	9.3206975	10.7516475	56	30	9.3385687	10.7490005
42	0	9.3212944	10.7515576	57	0	9.3391633	10.7489137
42	30	9.3218911	10.7514681	57	30	9.3397577	10.7488273
43	0	9.3224877	10.7513785	58	0	9.3403521	10.7487409
43	30	9.3230843	10.7512891	58	30	9.3409464	10.7486546
44	0	9.3236809	10.7511997	59	0	9.3415407	10.7485683
44	30	9.3242773	10 7511105	59	30	9.3421347	10.7484823
45	0	9.3248737	10.7510213	60	0	9 3427288	10.7483964

24 DEGREES.

Minutes	Seconds	$x^3 - bx = z$	$x - x^3 = z$	Minutes	Seconds	$x^3 - bx = z$	$x - x^3 = z$
0	0	9.3427288	10.7483904	15	0	9.3605178	10.7458654
0	30	9.3433227	10.7483105	15	30	9.3611096	10.7457826
1	0	9.3439167	10.7482247	16	0	9.3617015	10.7456999
1	30	9.3445106	10.7481390	16	30	9.3622932	10.7456174
2	0	9.3451045	10.7480533	17	0	9.3628850	10.7455350
2	30	9.3456981	10.7479679	17	30	9.3634765	10.7454527
3	0	9.3462918	10.7478826	18	0	9.3640681	10.7453705
3	30	9.3468853	10.7477973	18	30	9.3646595	10.7452883
4	0	9.3474789	10.7477121	19	0	9.3652510	10.7452062
4	30	9.3480723	10.7476271	19	30	9.3658423	10.7451245
5	0	9.3486657	10.7475421	20	0	9.3664335	10.7450427
5	30	9.3492589	10.7474573	20	30	9.3670246	10.7449610
6	0	9.3498522	10.7473726	21	0	9.3676158	10.7448794
6	30	9.3504452	10.7472880	21	30	9.3682069	10.7447979
7	0	9.3510383	10.7472035	22	0	9.3687980	10.7447164
7	30	9.3516313	10.7471191	22	30	9.3693889	10.7446353
8	0	9.3522243	10.7470347	23	0	9.3699797	10.7445541
8	30	9.3528171	10.7469505	23	30	9.3705705	10.7444731
9	0	9.3534099	10.7468663	24	0	9.3711613	10.7443921
9	30	9.3540026	10.7467824	24	30	9.3717519	10.7443113
10	0	9.3545953	10.7466985	25	0	9.3723425	10.7442305
10	30	9.3551878	10.7466148	25	30	9.3729331	10.7441499
11	0	9.3557803	10.7465311	26	0	9.3735236	10.7440692
11	30	9.3573727	10.7454475	26	30	9.3741139	10.7439889
12	0	9.3569651	10.7463639	27	0	9.3747042	10.7439086
12	30	9.3575574	10.7462806	27	30	9.3752945	10.7438285
13	0	9.3581497	10.7461973	28	0	9.3758847	10.7437483
13	30	9.3587418	10.7461142	28	30	9.3764749	10.7436683
14	0	9.3593339	10.7460311	29	0	9.3770651	10.7435883
14	30	9.3599258	10.7459482	29	30	9.3776551	10.7435085
15	0	9.3605178	10.7458654	30	0	9.3782451	10.7434287

24 DEGREES.

Minutes	Seconds	$x^3 - bx = z$	$x - x^3 = z$	Minutes	Seconds	$x^3 - bx = z$	$bx - x^3 = z$
30	0	9.3782451	10.7434287	45	0	9.3959149	10.7410873
30	30	9.3788349	10.7433493	45	30	9.3965029	10.7410109
31	0	9.3794247	10.7432699	46	0	9.3970910	10.7409346
31	30	9.3800145	10.7431905	46	30	9.3976788	10.7408584
32	0	9.3806043	10.7431111	47	0	9.3982667	10.7407823
32	30	9.3811938	10.7430320	47	30	9.3988546	10.7407064
33	0	9.3817834	10.7429530	48	0	9.3994424	10.7406304
33	30	9.3823729	10.7428741	48	30	9.4000300	10.7405548
34	0	9.3829624	10.7427952	49	0	9.4006176	10.7404792
34	30	9.3835517	10.7427165	49	30	9.4012052	10.7404036
35	0	9.3841411	10.7426379	50	0	9.4017928	10.7403280
35	30	9.3847303	10.7425593	50	30	9.4023802	10.7402528
36	0	9.3853196	10.7424808	51	0	9.4029676	10.7401776
36	30	9.3859087	10.7424025	51	30	9.4035550	10.7401024
37	0	9.3864979	10.7423243	52	0	9.4041424	10.7400272
37	30	9.3870868	10.7422462	52	30	9.4047296	10.7399524
38	0	9.3876758	10.7421682	53	0	9.4053168	10.7398776
38	30	9.3882647	10.7420903	53	30	9.4059039	10.7398029
39	0	9.3888536	10.7420124	54	0	9.4064910	10.7397282
39	30	9.3894423	10.7419349	54	30	9.4070780	10.7396538
40	0	9.3900309	10.7418573	55	0	9.4076650	10.7395794
40	30	9.3906196	10.7417798	55	30	9.4082518	10.7395052
41	0	9.3912084	10.7417024	56	0	9.4088386	10.7394310
41	30	9.3917968	10.7416252	56	30	9.4094254	10.7393570
42	0	9.3923852	10.7415480	57	0	9.4100122	10.7392830
42	30	9.3929736	10.7414710	57	30	9.4105989	10.7392091
43	0	9.3935620	10.7413940	58	0	9.4111856	10.7391352
43	30	9.3941503	10.7413173	58	30	9.4117721	10.7390617
44	0	9.3947385	10.7412405	59	0	9.4123586	10.7389882
44	30	9.3953267	10.7411639	59	30	9.4129450	10.7389148
45	0	9.3959149	10.7410873	60	0	9.4135315	10.7388415

25 DEGREES.

Minutes	Seconds	$x^3-bx=2a^3$	$bx-x^3=2a^3$	Minutes	Seconds	$x^3-bx=2a^3$	$bx-x^3=2a^3$
0	0	9.4135315	10.7388415	15	0	9.4310995	10.7366915
0	30	9.4141178	10.7387682	15	30	9.4316843	10.7366215
1	0	9.4147042	10.7386950	16	0	9.4322692	10.7365516
1	30	9.4152905	10.7386221	16	30	9.4328538	10.7364818
2	0	9.4158767	10.7385491	17	0	9.4334385	10.7364121
2	30	9.4164628	10.7384764	17	30	9.4340231	10.7363427
3	0	9.4170489	10.7384037	18	0	9.4346076	10.7362732
3	30	9.4176349	10.7383311	18	30	9.4351921	10.7362039
4	0	9.4182210	10.7382586	19	0	9.4357766	10.7361346
4	30	9.4188069	10.7381863	19	30	9.4363609	10.7360655
5	0	9.4193928	10.7381140	20	0	9.4369453	10.7359965
5	30	9.4199785	10.7380419	20	30	9.4375296	10.7359276
6	0	9.4205643	10.7379699	21	0	9.4381139	10.7358587
6	30	9.4211500	10.7378980	21	30	9.4386982	10.7357900
7	0	9.4217357	10.7378261	22	0	9.4392825	10.7357213
7	30	9.4223213	10.7377545	22	30	9.4398665	10.7356529
8	0	9.4229069	10.7376829	23	0	9.4404506	10.7355846
8	30	9.4234924	10.7376114	23	30	9.4410346	10.7355164
9	0	9.4240779	10.7375399	24	0	9.4416186	10.7354482
9	30	9.4246633	10.7374687	24	30	9.4422025	10.7353801
10	0	9.4252487	10.7373975	25	0	9.4427865	10.7353121
10	30	9.4258340	10.7373264	25	30	9.4433703	10.7352443
11	0	9.4264193	10.7372553	26	0	9.4439541	10.7351765
11	30	9.4270045	10.7371845	26	30	9.4445379	10.7351089
12	0	9.4275897	10.7371137	27	0	9.4451217	10.7350413
12	30	9.4281747	10.7370431	27	30	9.4457054	10.7349740
13	0	9.4287598	10.7369726	28	0	9.4462890	10.7349066
13	30	9.4293448	10.7369022	28	30	9.4468725	10.7348395
14	0	9.4299298	10.7368318	29	0	9.4474560	10.7347724
14	30	9.4305147	10.7367617	29	30	9.4480394	10.7347055
15	0	9.4310995	10.7366915	30	0	9.4486230	10.7346386

25 DEGREES.

Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$	Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$
30	0	9.4486230	10.7346386	45	0	9.4661062	10.7326834
30	30	9.4492063	10.7345719	45	30	9.4666883	10.7326199
31	0	9.4497897	10.7345053	46	0	9.4672705	10.7325565
31	30	9.4503730	10.7344388	46	30	9.4678525	10.7324933
32	0	9.4509563	10.7343723	47	0	9.4684345	10.7324301
32	30	9.4515395	10.7343059	47	30	9.4690165	10.7323671
33	0	9.4521228	10.7342396	48	0	9.4695985	10.7323041
33	30	9.4527058	10.7341736	48	30	9.4701803	10 7322413
34	0	9.4532889	10.7341077	49	0	9.4707622	10.7321786
34	30	9.4538720	10.7340418	49	30	9.4713440	10.7321160
35	0	9.4544551	10.7339759	50	0	9.4719258	10.7320534
35	30	9.4550379	10.7339103	50	30	9.4725075	10.7319911
36	0	9.4556208	10.7338448	51	0	9.4730892	10.7319288
36	30	9.4562037	10.7337793	51	30	9.4736709	10.7318667
37	0	9.4567867	10.7337139	52	0	9.4742526	10.7318046
37	30	9.4573693	10.7336487	52	30	9.4748342	10.7317426
38	0	9.4579521	10.7335837	53	0	9.4754159	10.7316807
38	30	9.4585348	10.7335186	53	30	9 4759973	10.7316191
39	0	9.4591176	10.7334536	54	0	9.4765787	10.7315575
39	30	9.4597001	10.7333889	54	30	9.4771602	10.7314960
40	0	9.4602826	10.7333242	55	0	9.4777417	10 7314345
40	30	9.4608652	10.7332596	55	30	9.4783230	10.7313732
41	0	9.4614478	10.7331950	56	0	9.4789044	10.7313120
41	30	9.4620302	10.7331308	56	30	9.4794856	10.7312510
42	0	9.4626126	10.7330666	57	0	9 4800669	10.7311901
42	30	9.4631950	10.7330024	57	30	9.4806480	10.7311292
43	0	9.4637774	10.7329382	58	0	9.4812293	10.7310685
43	30	9.4643596	10.7328744	58	30	9.4818104	10.7310078
44	0	9.4649419	10 7328107	59	0	9.4823916	10 7309472
44	30	9.4655240	10.7327470	59	30	9.4829727	10.7308866
45	0	9.4661062	10.7326834	60	0	9.4835538	10.7308266

26 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.4835538	10.7308266	15	0	9.5009695	10.7290695
0	30	9.4841347	10.7307665	15	30	9.5015495	10.7290127
1	0	9.4847156	10.7307064	16	0	9.5021296	10.7289560
1	30	9.4852965	10.7306465	16	30	9.5027095	10.7288993
2	0	9.4858775	10.7305867	17	0	9.5032896	10.7288428
2	30	9.4864583	10.7305269	17	30	9.5038694	10.7287864
3	0	9.4870392	10.7304672	18	0	9.5044493	10.7287301
3	30	9.4876200	10.7304078	18	30	9.5050292	10.7286746
4	0	9.4882008	10.7303484	19	0	9.5056090	10.7286178
4	30	9.4887815	10.7302891	19	30	9.5061888	10.7285620
5	0	9.4893622	10.7302298	20	0	9.5067685	10.7285061
5	30	9.4899429	10.7301707	20	30	9.5073482	10.7284504
6	0	9.4905237	10.7301117	21	0	9.5079280	10.7283948
6	30	9.4911042	10.7300530	21	30	9.5085077	10.7283393
7	0	9.4916847	10.7299943	22	0	9.5090874	10.7282838
7	30	9.4922652	10.7299356	22	30	9.5096670	10.7282286
8	0	9.4928458	10.7298770	23	0	9.5102466	10.7281734
8	30	9.4934263	10.7298187	23	30	9.5108261	10.7281185
9	0	9.4940067	10.7297603	24	0	9.5114056	10.7280636
9	30	9.4945871	10.7297021	24	30	9.5119851	10.7280087
10	0	9.4951676	10.7296440	25	0	9.5125647	10.7279539
10	30	9.4957479	10.7295861	25	30	9.5131442	10.7278994
11	0	9.4963282	10.7295282	26	0	9.5137236	10.7278448
11	30	9.4969084	10.7294706	26	30	9.5143029	10.7277905
12	0	9.4974886	10.7294130	27	0	9.5148825	10.7277363
12	30	9.4980689	10.7293555	27	30	9.5154616	10.7276822
13	0	9.4986492	10.7292980	28	0	9.5160410	10.7276282
13	30	9.4992293	10.7292407	28	30	9.5166203	10.7275743
14	0	9.4998095	10.7291835	29	0	9.5171996	10.7275204
14	30	9.5003895	10.7291265	29	30	9.5177789	10.7274667
15	0	9.5009695	10.7290695	30	0	9.5183582	10.7274130

26 DEGREES.

Minutes	Seconds	$x^3 - bx = 2a$	$bx - x^3 = 2a$	Minutes	Seconds	$x^3 - bx = 2a$	$bx - x^3 = 2a$
30	0	9.5183582	10.7274130	45	0	9.5357237	10.7258585
30	30	9.5189374	10.7273596	45	30	9.5363022	10.7258086
31	0	9.5195166	10.7273062	46	0	9.5368806	10.7257586
31	30	9.5200956	10.7272530	46	30	9.5374591	10.7257089
32	0	9.5206747	10.7271999	47	0	9.5380375	10.7256591
32	30	9.5212538	10.7271470	47	30	9.5386159	10.7256095
33	0	9.5218329	10.7270941	48	0	9.5391944	10.7255600
33	30	9.5224119	10.7270413	48	30	9.5397728	10.7255106
34	0	9.5229910	10.7269886	49	0	9.5403513	10.7254613
34	30	9.5235700	10.7269360	49	30	9.5409296	10.7254122
35	0	9.5241490	10.7268834	50	0	9.5415080	10.7253632
35	30	9.5247280	10.7268312	50	30	9.5420862	10.7253144
36	0	9.5253069	10.7267789	51	0	9.5426644	10.7252656
36	30	9.5258857	10.7267269	51	30	9.5432427	10.7252169
37	0	9.5264646	10.7266750	52	0	9.5438211	10.7251683
37	30	9.5270434	10.7266230	52	30	9.5443993	10.7251199
38	0	9.5276224	10.7265712	53	0	9.5449775	10.7250715
38	30	9.5282012	10.7265196	53	30	9.5455557	10.7250233
39	0	9.5287800	10.7264680	54	0	9.5461340	10.7249752
39	30	9.5293587	10.7264167	54	30	9.5467121	10.7249273
40	0	9.5299374	10.7263654	55	0	9.5472902	10.7248794
40	30	9.5305162	10.7263142	55	30	9.5478683	10.7248317
41	0	9.5310950	10.7262630	56	0	9.5484464	10.7247840
41	30	9.5316735	10.7262121	56	30	9.5490245	10.7247365
42	0	9.5322521	10.7261613	57	0	9.5496027	10.7246891
42	30	9.5328308	10.7261106	57	30	9.5501807	10.7246419
43	0	9.5334095	10.7260599	58	0	9.5507587	10.7245947
43	30	9.5339880	10.7260094	58	30	9.5513367	10.7245477
44	0	9.5345666	10.7259590	59	0	9.5519147	10.7245007
44	30	9.5351451	10.7259087	59	30	9.5524927	10.7244538
45	0	9.5357237	10.7258585	60	0	9.5530708	10.7244071

27 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2$	$bx - x^3 = 2c$
0	0	9.5530708	10.7244072	15	0	9.5704036	10.7230604
0	30	9.5536486	10.7243606	15	30	9.5709811	10.7230173
1	0	9.5542266	10.7243142	16	0	9.5715587	10.7229743
1	30	9.5548045	10.7242679	16	30	9.5721362	10.7229316
2	0	9.5553824	10.7242216	17	0	9.5727137	10.7228889
2	30	9.5559603	10.7241755	17	30	9.5732912	10.7228464
3	0	9.5565383	10.7241295	18	0	9.5738687	10.7228039
3	30	9.5571161	10.7240835	18	30	9.5744462	10.7227616
4	0	9.5576941	10.7240377	19	0	9.5750237	10.7227193
4	30	9.5582719	10.7239921	19	30	9.5756012	10.7226772
5	0	9.5588497	10.7239465	20	0	9.5761787	10.7226351
5	30	9.5594275	10.7239011	20	30	9.5767562	10.7225932
6	0	9.5600054	10.7238558	21	0	9.5773337	10.7225513
6	30	9.5605831	10.7238107	21	30	9.5779111	10.7225097
7	0	9.5611608	10.7237656	22	0	9.5784886	10.7224682
7	30	9.5617385	10.7237207	22	30	9.5790660	10.7224268
8	0	9.5623163	10.7236759	23	0	9.5796435	10.7223855
8	30	9.5628940	10.7236312	23	30	9.5802208	10.7223444
9	0	9.5634718	10.7235866	24	0	9.5807982	10.7223034
9	30	9.5640495	10.7235421	24	30	9.5813756	10.7222624
10	0	9.5646272	10.7234976	25	0	9 5819531	10.7222215
10	30	9.5652049	10.7234535	25	30	9.5825304	10.7221808
11	0	9.5657825	10.7234093	26	0	9.5831078	10.7221402
11	30	9.5663602	10.7233654	26	30	9.5836852	10.7220998
12	0	9.5669378	10.7233214	27	0	9.5842626	10.7220594
12	30	9.5675155	10.7232777	27	30	9.5848398	10.7220192
13	0	9.5680931	10.7232339	28	0	9.5854172	10.7219792
13	30	9.5686708	10.7231904	28	30	9.5859945	10.7219391
14	0	9.5692485	10.7231469	29	0	9.5865720	10.7218992
14	30	9.5698260	10.7231036	29	30	9.5871493	10.7218595
15	0	9.5704036	10.7230604	30	0	9.5877266	10.7218198

27 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$x - x^3 = 2c$
30	0	9.5877266	10.7218198	45	0	9.6050443	10.7206871
30	30	9.5883039	10.7217803	45	30	9.6056215	10.7206513
31	0	9.5888813	10.7217409	46	0	9.6061987	10.7206155
31	30	9.5894585	10.7217017	46	30	9.6067759	10.7205799
32	0	9.5900358	10.7216626	47	0	9.6073531	10.7205443
32	30	9 5906130	10.7216236	47	30	9.6079303	10.7205089
33	0	9.5911903	10.7215847	48	0	9.6085076	10.7204736
33	30	9 5917676	10 7215460	48	30	9.6090848	10.7204384
34	0	9.5923449	10.7215073	49	0	9.6096621	10.7204033
34	30	9 5929221	10.7214687	49	30	9.6102393	10.7203685
35	0	9 5934995	10.7214303	50	0	9.6108165	10.7203337
35	30	9.5940767	10.7213919	50	30	9.6113937	10.7202991
36	0	9.5946541	10.7213537	51	0	9.6119709	10.7202645
36	30	9.5952313	10.7213157	51	30	9.6125481	10.7202301
37	0	9.5958085	10.7212777	52	0	9 6131254	10.7201958
37	30	9.5963858	10.7212400	52	30	9.6137026	10.7201616
38	0	9.5969630	10.7212022	53	0	9.6142799	10.7201275
38	30	9.5975403	10.7211647	53	30	9.6148571	10.7200937
39	0	9 5981176	10.7211272	54	0	9.6154343	10.7200599
39	30	9.5986948	10.7210898	54	30	9.6160115	10.7200263
40	0	9.5992721	10.7210525	55	0	9.6165887	10.7199927
40	30	9.5998493	10.7210155	55	30	9.6171659	10.7199593
41	0	9.6004265	10.7209785	56	0	9.6177432	10.7199260
41	30	9.6010037	10.7209417	56	30	9.6183204	10.7198928
42	0	9.6015809	10.7209049	57	0	9.6188977	10.7198597
42	30	9.6021582	10 7208684	57	30	9.6194749	10.7198267
43	0	9.6027354	10 7208318	58	0	9.6200523	10.7197939
43	30	9.6033126	10.7207954	58	30	9.6206294	10.7197612
44	0	9.6038899	10.7207591	59	0	9.6212067	10.7197287
44	30	9.6044671	10.7207231	59	30	9.6217840	10.7196962
45	0	9.6050443	10.7206871	60	0	9 6223614	10.7196638

28 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.6223614	10.7196638	15	0	9.6396821	10.7187521
0	30	9.6229386	10.7196316	15	30	9.6402595	10.7187237
1	0	9.6235159	10.7195995	16	0	9.6408370	10.7186954
1	30	9.6240932	10.7195676	16	30	9.6414145	10.7186671
2	0	9.6246705	10.7195357	17	0	9 6419922	10.7186390
2	30	9.6252477	10.7195041	17	30	9.6425697	10.7186111
3	0	9.6258249	10.7194725	18	0	9.6431472	10.7185832
3	30	9.6264023	10.7194411	18	30	9.6437247	10.7185555
4	0	9.6269797	10.7194097	19	0	9 6443023	10.7185279
4	30	9.6275569	10 7193785	19	30	9.6448798	10 7185006
5	0	9.6281342	10.7193474	20	0	9.6454573	10.7184733
5	30	9.6287115	10.7193165	20	30	9.6460349	10.7184461
6	0	9.6292889	10.7192857	21	0	9.6466126	10.7184190
6	30	9.6298662	10.7192550	21	30	9.6471901	10.7183921
7	0	9.6304436	10.7192244	22	0	9 6477677	10.7183653
7	30	9 6310209	10.7191939	22	30	9.6483453	10.7183387
8	0	9.6315983	10.7191635	23	0	9.6489230	10.7183122
8	30	9.6321756	10.7191334	23	30	9.6495006	10.7182858
9	0	9.6327529	10 7191033	24	0	9.6500783	10.7182595
9	30	9.6333304	10.7190734	24	30	9.6506559	10.7182333
10	0	9.6339078	10.7190434	25	0	9.6512337	10.7182073
10	30	9.6344852	10.7190138	25	30	9.6518114	10.7181814
11	0	9.6350626	10.7189842	26	0	9.6523891	10 7181555
11	30	9 6356400	10.7189548	26	30	9.6529669	10.7181299
12	0	9.6362174	10.7189254	27	0	9.6534447	10.7182043
12	30	9.6367948	10.7188962	27	30	9.6540224	10.7181790
13	0	9.6373723	10.7188671	28	0	9.6547001	10.7180537
13	30	9.6379498	10.7188382	28	30	9.6552779	10.7180285
14	0	9 6385273	10.7188093	29	0	9.6558558	10.7180034
14	30	9.6391046	10.7187806	29	30	9 6564336	10.7179786
15	0	9.6396821	10.7187521	30	0	9.6570114	10.7179538

28 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.6570114	10.7179538	45	0	9.6743541	10.7172713
30	30	9.6575892	10.7179292	45	30	9.6749324	10.7172506
31	0	9.6581671	10.7179047	46	0	9.6755108	10.7172300
31	30	9.6587450	10.7178804	46	30	9.6760892	10.7172096
32	0	9.6593229	10.7178561	47	0	9.6766676	10.7171892
32	30	9.6599008	10.7178320	47	30	9.6772460	10.7171690
33	0	9.6604788	10.7178080	48	0	9.6778245	10.7171489
33	30	9.6610566	10.7177842	48	30	9.6784030	10.7171290
34	0	9.6616345	10.7177605	49	0	9.6789816	10.7171092
34	30	9.6622125	10.7177369	49	30	9.6795601	10 7170895
35	0	9.6627906	10.7177134	50	0	9.6801387	10.7170699
35	30	9.6633685	10.7176901	50	30	9.6807173	10.7170505
36	0	9.6639465	10.7176669	51	0	9.6812959	10.7170311
36	30	9.6645246	10.7176438	51	30	9.6818745	10.7170121
37	0	9.6651027	10.7176207	52	0	9.6824531	10.7169931
37	30	9.6656808	10.7175980	52	30	9.6830318	10.7169742
38	0	9.6662589	10.7175753	53	0	9.6836106	10.7169554
38	30	9.6668369	10 7175527	53	30	9.6841892	10.7169368
39	0	9.6674151	10.7175303	54	0	9.6847679	10.7169183
39	30	9.6679932	10.7175080	54	30	9.6853466	10.7169000
40	0	9.6685714	10.7174858	55	0	9.6859254	10.7168818
40	30	9.6691496	10.7174638	55	30	9.6865043	10.7168637
41	0	9 6697270	10.7174410	56	0	9.6870832	10.7168456
41	30	9 6703059	10.7174201	56	30	9.6876620	10.7168278
42	0	9.6708841	10.7173985	57	0	9.6882409	10.7168101
42	30	9.6714624	10.7173770	57	30	9.6888198	10.7167926
43	0	9 6720407	10.7173555	58	0	9.6893988	10.7167752
43	30	9.6726190	10.7173344	58	30	9 6899777	10.7167579
44	0	9.6731973	10.7173133	59	0	9.6905567	10.7167407
44	30	9.6737756	10.7172922	59	30	9.6911357	10.7167237
45	0	9.6743541	10.7172713	60	0	9.6917148	10.7167068

29 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.6917148	10.7167068	15	0	9.7090985	10.7162629
0	30	9.6922938	10.7166900	15	30	9.7096784	10 7162502
1	0	9.6928730	10 7166734	16	0	9.7102584	10.7162376
1	30	9.6934520	10.7166570	16	30	9.7108383	10 7162253
2	0	9.6940311	10.7166407	17	0	9.7114182	10 7162130
2	30	9.6946102	10.7166244	17	30	9.7119983	10.7162009
3	0	9.6951895	10.7166083	18	0	9.7125784	10.7161888
3	30	9.6957686	10.7165924	18	30	9 7131585	10.7161769
4	0	9.6963478	10.7165766	19	0	9.7137387	10.7161651
4	30	9.6969271	10.7165609	19	30	9 7143188	10.7161536
5	0	9.6975065	10 7165453	20	0	9.7148990	10.7161422
5	30	9.6980858	10.7165300	20	30	9.7154793	10.7161309
6	0	9 6986651	10.7165147	21	0	9.7160596	10 7161196
6	30	9.6992445	10.7164995	21	30	9.7166398	10.7161086
7	0	9.6998240	10.7164844	22	0	9.7172210	10 7160986
7	30	9.7004034	10.7164696	22	30	9.7177998	10 7160862
8	0	9.7009829	10.7164549	23	0	9.7183811	10.7160763
8	30	9.7015623	10 7164403	23	30	9.7189614	10.7160658
9	0	9.7021419	10.7164259	24	0	9.7195419	10 7160555
9	30	9.7027214	10.7164116	24	30	9 7201223	10.7160453
10	0	9.7033010	10.7163974	25	0	9.7207029	10 7160353
10	30	9.7038805	10.7163833	25	30	9.7212835	10.7160253
11	0	9.7044602	10.7163694	26	0	9.7218642	10.7160154
11	30	9.7050398	10.7163556	26	30	9.7224448	10.7160058
12	0	9.7056196	10.7163420	27	0	9.7230255	10.7159963
12	30	9.7061993	10.7163285	27	30	9.7236062	10.7159870
13	0	9.7067791	10.7163151	28	0	9.7241869	10.7159777
13	30	9.7073589	10.7163019	28	30	9.7247677	10 7159687
14	0	9.7079387	10.7162887	29	0	9.7253485	10 7159597
14	30	9.7085186	10.7162758	29	30	9.7259293	10.7159509
15	0	9 7090985	10.7162629	30	0	9.7265103	10 7159427

29 DEGREES.

Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$	Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=$
30	0	9.7265103	10.7159423	45	0	9.7439555	10.71574
30	30	9.7270913	10.7159337	45	30	9.7445376	10.71574
31	0	9.7276724	10.7159252	46	0	9.7451199	10.71573
31	30	9.7282533	10.7159169	46	30	9.7457021	10.71573
32	0	9.7288344	10.7159088	47	0	9.7462844	10.71573
32	30	9.7294155	10.7159009	47	30	9.7468667	10.71572
33	0	9.7299966	10.7158930	48	0	9.7474491	10.71572
33	30	9.7305777	10.7158853	48	30	9.7480315	10.71572
34	0	9.7311590	10.7158778	49	0	9.7486140	10.71571
34	30	9.7317402	10.7158704	49	30	9.7491964	10.71571
35	0	9.7323215	10.7158631	50	0	9.7497790	10.71571
35	30	9.7329028	10.7158570	50	30	9.7503615	10.71570
36	0	9.7334842	10.7158499	51	0	9.7509432	10.71570
36	30	9.7340655	10.7158421	51	30	9.7515267	10.71570
37	0	9.7346470	10.7158354	52	0	9.7521095	10.71570
37	30	9.7352285	10.7158289	52	30	9.7526922	10.71569
38	0	9.7357100	10.7158224	53	0	9.7532751	10.71569
38	30	9.7363916	10.7158162	53	30	9 7538579	10.71569
39	0	9.7369732	10.7158100	54	0	9.7544408	10.71569
39	30	9.7375548	10.7158040	54	30	9.7550238	10.71569
40	0	9.7381365	10.7157981	55	0	9.7556068	10 71568
40	30	9.7387182	10.7157924	55	30	9.7561898	10.71568
41	0	9.7393000	10.7157868	56	0	9.7567730	10.71568
41	30	9.7398817	10.7157815	56	30	9.7573561	10.71568
42	0	9.7404635	10.7157763	57	0	9 7579393	10.71568
42	30	9.7410454	10.7157712	57	30	9.7585225	10.71568
43	0	9.7416273	10.7157661	58	0	9.7591058	10.71568
43	30	9.7422093	10.7157613	58	30	9.7596891	10.71568
44	0	9.7427913	10.7157565	59	0	9.7602725	10.71568
44	30	9.7433734	10.7157520	59	30	9.7608559	10.71568
45	0	9.7439555	10.7157475	60	0	9.7614394	10.71568

30 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.7614394	10.7156818	15	0	9.7789674	10.7157486
0	30	9.7620229	10.7156819	15	30	9.7795524	10.7157532
1	0	9.7626065	10.7156821	16	0	9.7801375	10.7157579
1	30	9.7631901	10.7156825	16	30	9.7807227	10.7157627
2	0	9.7637738	10.7156830	17	0	9.7813080	10.7157676
2	30	9.7643575	10.7156837	17	30	9.7818933	10.7157729
3	0	9.7649413	10.7156845	18	0	9.7824786	10.7157782
3	30	9.7655251	10.7156855	18	30	9.7830640	10.7157836
4	0	9.7661090	10.7156866	19	0	9.7836496	10.7157892
4	30	9.7666929	10.7156879	19	30	9.7842351	10.7157949
5	0	9.7672768	10.7156892	20	0	9.7848208	10.7158008
5	30	9.7678608	10.7156908	20	30	9.7854064	10.7158068
6	0	9.7684449	10.7156925	21	0	9.7859922	10.7158130
6	30	9.7690290	10.7156944	21	30	9.7865779	10.7158195
7	0	9.7696132	10.7156964	22	0	9.7871636	10.7158260
7	30	9.7701974	10.7156986	22	30	9.7877495	10.7158327
8	0	9.7707817	10.7157009	23	0	9.7883355	10.7158395
8	30	9.7713661	10.7157033	23	30	9.7889215	10.7158465
9	0	9.7719506	10.7157058	24	0	9.7895076	10.7158536
9	30	9.7725349	10.7157085	24	30	9.7900937	10.7158609
10	0	9.7731194	10.7157114	25	0	9.7906799	10 7158683
10	30	9.7737039	10.7157145	25	30	9.7912661	10.7158759
11	0	9.7742885	10.7157177	26	0	9.7918524	10.7158836
11	30	9.7748732	10.7157210	26	30	9.7924387	10.7158915
12	0	9.7754580	10.7157244	27	0	9.7930252	10.7158996
12	30	9.7760427	10.7157281	27	30	9 7936116	10.7159078
13	0	9.7766275	10.7157319	28	0	9.7941982	10.7159162
13	30	9.7772123	10.7157359	28	30	9.7947848	10.7159246
14	0	9.7777972	10.7157400	29	0	9.7953716	10.7159332
14	30	9.7783822	10.7157442	29	30	9.7959582	10.7159420
15	0	9.7789674	10.7157486	30	0	9.7965450	10.7159510

30 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.7965450	10.7159510	45	0	9.8141782	10.7162930
30	30	9.7971318	10.7159602	45	30	9.8147670	10.7163068
31	0	9.7977187	10.7159695	46	0	9.8153560	10.7163208
31	30	9.7983057	10.7159789	46	30	9.8159449	10.7163349
32	0	9.7988928	10.7159884	47	0	9.8165340	10.7163492
32	30	9.7994799	10.7159983	47	30	9.8171230	10.7163638
33	0	9.8000670	10.7160082	48	0	9.8177121	10.7163785
33	30	9.8006542	10.7160182	48	30	9.8183013	10.7163933
34	0	9.8012416	10.7160284	49	0	9.8188906	10.7164082
34	30	9.8018288	10.7160388	49	30	9.8194799	10.7164233
35	0	9.8024162	10.7160494	50	0	9.8200694	10.7164386
35	30	9.8030037	10.7160601	50	30	9.8206588	10.7164540
36	0	9.8035913	10.7160709	51	0	9.8212484	10.7164696
36	30	9.8041789	10.7160819	51	30	9.8218380	10.7164854
37	0	9.8047666	10.7160930	52	0	9.8224278	10.7165014
37	30	9.8053543	10.7161043	52	30	9.8230176	10.7165174
38	0	9.8059422	10.7161158	53	0	9.8236075	10.7165335
38	30	9.8065300	10.7161274	53	30	9.8241974	10.7165500
39	0	9.8071180	10.7161392	54	0	9.8247874	10.7165666
39	30	9.8077059	10.7161511	54	30	9.8253054	10.7165114
40	0	9.8082940	10.7161632	55	0	9.8259675	10.7166003
40	30	9.8088821	10.7161755	55	30	9.8265578	10.7166174
41	0	9.8094703	10.7161879	56	0	9.8271481	10.7166345
41	30	9.8100585	10.7162005	56	30	9.8277385	10.7166519
42	0	9.8106469	10.7162133	57	0	9.8283290	10.7166694
42	30	9.8112352	10.7162262	57	30	9.8289194	10.7166872
43	0	9.8118237	10.7162393	58	0	9.8295099	10.7167051
43	30	9.8124122	10.7162524	58	30	9.8301006	10.7167232
44	0	9.8130009	10.7162657	59	0	9.8306913	10.7167413
44	30	9.8135895	10.7162793	59	30	9.8312821	10.7167597
45	0	9.8141782	10.7162930	60	0	9.8318730	10.7167782

31 DEGREES.

Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$	Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$
0	0	9.8318730	10.7167782	15	0	9.8496357	10.7174109
0	30	9.8324641	10.7167969	15	30	9.8502290	10.7174346
1	0	9.8330552	10.7168156	16	0	9.8508225	10.7174585
1	30	9.8336463	10.7168347	16	30	9.8514160	10.7174824
2	0	9.8342375	10.7168539	17	0	9.8520097	10.7175065
2	30	9.8358287	10.7168733	17	30	9.8526033	10.7175309
3	0	9.8354200	10.7168928	18	0	9.8531971	10.7175555
3	30	9.8360114	10.7169124	18	30	9.8537908	10.7175802
4	0	9.8366030	10.7169322	19	0	9.8543847	10.7176051
4	30	9.8371945	10.7169523	19	30	9.8549787	10.7176301
5	0	9.8377861	10.7169725	20	0	9.8555729	10.7176553
5	30	9.8383778	10.7169928	20	30	9.8561671	10.7176807
6	0	9.8389697	10.7170133	21	0	9.8567614	10.7177062
6	30	9.8395616	10.7170340	21	30	9.8573557	10.7177319
7	0	9.8401536	10.7170548	22	0	9.8579501	10.7177577
7	30	9.8407456	10.7170758	22	30	9.8585446	10.7177838
8	0	9.8413377	10.7170969	23	0	9.8591392	10.7178100
8	30	9.8419299	10.7171183	23	30	9.8597339	10.7178365
9	0	9.8425222	10.7171398	24	0	9.8603287	10.7178631
9	30	9.8431145	10.7171615	24	30	9.8609235	10.7178899
10	0	9.8437069	10.7171833	25	0	9.8615184	10.7179168
10	30	9.8442995	10.7172053	25	30	9.8621135	10.7179439
11	0	9.8448922	10.7172274	26	0	9.8627087	10.7179711
11	30	9.8454848	10.7172498	26	30	9.8633038	10.7179986
12	0	9.8460775	10.7172723	27	0	9.8638990	10.7180262
12	30	9.8466704	10.7172950	27	30	9.8644944	10.7180540
13	0	9.8472634	10.7173178	28	0	9.8650899	10.7180819
13	30	9.8478563	10.7173409	28	30	9.8656855	10.7181101
14	0	9.8484493	10.7173641	29	0	9.8662812	10.7181384
14	30	9.8490424	10.7173874	29	30	9.8668769	10.7181669
15	0	9.8496357	10.7174109	30	0	9.8674727	10.7181955

31 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.8674727	10.7181955	45	0	9.8853907	10.7191367
30	30	9.8680686	10.7182244	45	30	9.8859895	10.7191709
31	0	9.8686646	10.7182534	46	0	9.8865884	10.7192052
31	30	9.8692607	10.7182825	46	30	9.8871873	10.7192397
32	0	9.8698570	10.7183118	47	0	9.8877863	10.7192743
32	30	9.8704532	10.7183414	47	30	9.8883854	10.7193092
33	0	9.8710495	10.7183711	48	0	9.8889847	10.7193443
33	30	9 8716460	10.7184010	48	30	9.8895839	10.7193795
34	0	9.8722426	10.7184310	49	0	9.8901833	10.7194149
34	30	9.8728393	10.7184713	49	30	9.8907829	10.7194505
35	0	9.8734360	10.7184916	50	0	9.8913826	10.7194862
35	30	9.8740328	10.7185222	50	30	9.8919823	10.7195221
36	0	9.8746298	10 7185530	51	0	9.8925822	10.7195582
36	30	9.8752269	10.7185839	51	30	9.8931821	10.7195945
37	0	9.8758241	10.7186149	52	0	9.8937822	10.7196310
37	30	9.8764212	10.7186462	52	30	9.8943823	10.7196677
38	0	9.8770185	10.7186777	53	0	9.8949825	10.7197045
38	30	9.8776159	10.7187093	53	30	9.8955828	10.7197416
39	0	9 8782135	10.7187411	54	0	9.8961833	10.7197789
39	30	9.8788109	10.7187731	54	30	9.8967838	10.7198162
40	0	9.8794086	10.7188054	55	0	9.8973845	10.7198537
40	30	9.8800063	10.7188377	55	30	9.8979852	10.7198916
41	0	9.8806042	10.7188702	56	0	9.8985860	10.7199296
41	30	9.8812022	10.7189030	56	30	9.8991870	10.7199678
42	0	9.8818002	10.7189358	57	0	9.8997880	10.7200060
42	30	9.8823984	10 7189688	57	30	9.9003892	10.7200446
43	0	9.8829968	10.7190020	58	0	9.9009905	10.7200833
43	30	9.8835951	10.7190355	58	30	9.9015919	10.7201221
44	0	9.8841935	10.7190691	59	0	9.9021935	10.7201611
44	30	9.8847920	10.7191028	59	30	9.9027950	10.7202004
45	0	9.8853907	10.7191367	60	0	9 9033966	10.7202398

32 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	9.9033966	10.7202398	15	0	9.9214979	10.7215099
0	30	9.9039984	10.7202794	15	30	9.9221030	10.7215552
1	0	9.9046004	10.7203192	16	0	9.9227082	10.7216006
1	30	9.9052024	10.7203592	16	30	9.9233135	10.7216463
2	0	9.9058045	10.7203993	17	0	9.9239190	10.7216922
2	30	9.9064067	10.7204397	17	30	9.9245246	10.7217382
3	0	9.9070091	10.7204803	18	0	9.9251304	10.7217844
3	30	9.9076114	10.7205210	18	30	9.9257361	10.7218309
4	0	9.9082140	10.7205620	19	0	9.9263419	10.7218775
4	30	9.9088167	10.7206031	19	30	9.9269480	10.7219244
5	0	9.9094195	10.7206443	20	0	9.9275542	10.7219714
5	30	9.9100224	10.7206858	20	30	9.9281604	10.7220186
6	0	9.9106254	10.7207274	21	0	9.9287668	10.7220660
6	30	9.9112285	10.7207693	21	30	9.9293732	10.7221136
7	0	9.9118317	10.7208113	22	0	9.9299798	10.7221614
7	30	9.9124350	10.7208536	22	30	9.9305866	10.7222094
8	0	9.9130384	10.7208960	23	0	9.9311935	10.7222575
8	30	9.9136418	10.7209386	23	30	9.9318005	10.7223059
9	0	9.9142455	10 7209815	24	0	9.9324076	10.7223544
9	30	9.9148492	10.7210244	24	30	9.9330148	10.7224032
10	0	9.9154532	10.7210676	25	0	9.9336222	10.7224522
10	30	9.9160571	10.7211109	25	30	9.9342296	10.7225014
11	0	9.9166613	10.7211545	26	0	9.9348372	10.7225508
11	30	9 91.72654	10.7211982	26	30	9.9354448	10.7226004
12	0	9.9178698	10.7212422	27	0	9.9360526	10.7226502
12	30	9.9184741	10.7212863	27	30	9.9366605	10.7227001
13	0	9.9190787	10.7213307	28	0	9.9372686	10.7227502
13	30	9.9196832	10.7213752	28	30	9.9378768	10.7228006
14	0	9.9202880	10.7214200	29	0	9.9384851	10.7228511
14	30	9.9208929	10.7214649	29	30	9 9390935	10.7229019
15	0	9.9214979	10.7215099	30	0	9.9397021	10.7229529

32 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	9.9397021	10.7229529	45	0	9.9580171	10.7245747
30	30	9.9403108	10.7230040	45	30	9.9586297	10.7246319
31	0	9.9409196	10.7230552	46	0	9.9592425	10.7246893
31	30	9.9415285	10.7231069	46	30	9.9598552	10.7247470
32	0	9.9421375	10.7231587	47	0	9.9604680	10.7248048
32	30	9.9427466	10.7232106	47	30	9.9610811	10.7248629
33	0	9.9443559	10.7222627	48	0	9.9616943	10.7249211
33	30	9.9449654	10.7223150	48	30	9.9623076	10.7249796
34	0	9.9445750	10.7233674	49	0	9.9629210	10.7250382
34	30	9.9451847	10.7234203	49	30	9.9635346	10.7250972
35	0	9.9457944	10.7234732	50	0	9.9641483	10.7251563
35	30	9.9464044	10.7235264	50	30	9.9647621	10.7252145
36	0	9.9470144	10.7235796	51	0	9.9653762	10.7252750
36	30	9.9476246	10.7236332	51	30	9.9659903	10.7253347
37	0	9.9482349	10.7236869	52	0	9.9666046	10.7253946
37	30	9.9488453	10.7237409	52	30	9.9672190	10.7254548
38	0	9.9494559	10.7237951	53	0	9.9678335	10.7255151
38	30	9.9500665	10.7238495	53	30	9.9684481	10.7255757
39	0	9.9506773	10.7239041	54	0	9.9690629	10.7256365
39	30	9.9512882	10.7239588	54	30	9.9696779	10.7256975
40	0	9.9518994	10.7240138	55	0	9.9702930	10.7257586
40	30	9.9525105	10.7240689	55	30	9.9709082	10.7258200
41	0	9.9531219	10.7241243	56	0	9.9715236	10.7258816
41	30	9.9537333	10.7241799	56	30	9.9721591	10.7260435
42	0	9.9543449	10.7242357	57	0	9.9727547	10.7260055
42	30	9.9549567	10.7242917	57	30	9.9733705	10.7260677
43	0	9.9555686	10.7243476	58	0	9.9739865	10.7261301
43	30	9.9561805	10.7244043	58	30	9.9746026	10.7261928
44	0	9.9567925	10.7244609	59	0	9.9752188	10.7262556
44	30	9.9574048	10.7245178	59	30	9.9758352	10.7263188
45	0	9.9580171	10.7245747	60	0	9.9764517	10.7263821

33 DEGREES.

Minutes	Seconds	$x^3 - bx = 2.$	$x - x^3 = 2.$	Minutes	Seconds	$x^3 - bx = 2.$	$x - x^3 = 2.$
0	0	9.9764517	10.7263821	15	0	9.9950141	10.7283821
0	30	9.9770682	10.7264456	15	30	9.9956352	10.7284522
1	0	9.9776850	10.7265094	16	0	9.9962564	10.7285224
1	30	9.9783019	10.7265733	16	30	9.9968778	10.7285930
2	0	9.9789191	10.7266375	17	0	9.9974993	10.7286637
2	30	9.9795362	10.7267018	17	30	9.9981209	10.7287347
3	0	9.9801536	10.7267664	18	0	9.9987427	10 7288059
3	30	9.9807711	10.7268313	18	30	9 9993647	10.7288773
4	0	9.9813887	10.7268963	19	0	9.9999869	10.7289489
4	30	9.9820064	10.7269616	19	30	10.0006092	10.7290208
5	0	9.9826253	10 7270261	20	0	10 0012316	10 7290928
5	30	9.9832434	10.7270918	20	30	10.0018542	10.7291652
6	0	9.9838607	10.7271587	21	0	10.0024770	10 7292378
6	30	9.9844790	10.7272248	21	30	10.0030999	10.7293105
7	0	9.9850975	10.7272911	22	0	10.0037230	10.7293834
7	30	9.9857162	10.7273576	22	30	10.0043463	10.7294567
8	0	9.9863351	10.7274243	23	0	10.0049697	10.7295301
8	30	9.9869540	10.7274914	23	30	10.0055932	10.7296038
9	0	9.9875730	10.7275586	24	0	10.0062169	10.7296777
9	30	9.9881923	10.7276261	24	30	10.0068407	10.7297519
10	0	9.9888117	10.7276937	25	0	10.0074647	10 7298263
10	30	9.9894313	10.7277615	25	30	10.0080888	10.7299008
11	0	9.9900511	10.7278295	26	0	10.0087132	10.7299756
11	30	9.9906709	10.7278979	26	30	10.0093378	10.7300506
12	0	9 9912908	10.7279664	27	0	10.0099626	10.7301258
12	30	9.9919110	10.7280352	27	30	10.0105873	10.7302013
13	0	9.9925313	10.7281041	28	0	10.0112123	10.7302771
13	30	9.9931517	10.7281733	28	30	10.0118374	10.7303530
14	0	9.9937723	10.7282427	29	0	10.0124628	10.7304292
14	30	9.9943931	10.7283123	29	30	10.0130882	10.7305056
15	0	9 9950141	10.7283821	30	0	10.0137139	10 7305823

33 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.0137139	10.7305823	45	0	10.0325609	10.7329905
30	30	10.0143397	10.7306591	45	30	10.0331917	10.7330745
31	0	10.0149657	10.7307361	46	0	10.0338227	10.7331587
31	30	10.0155918	10.7308136	46	30	10.0344540	10.7332432
32	0	10.0162180	10.7308912	47	0	10.0350854	10.7333278
32	30	10.0168445	10.7309691	47	30	10.0357170	10.7334128
33	0	10.0174711	10.7310471	48	0	10.0363488	10.7334980
33	30	10.0180979	10.7311253	48	30	10.0369807	10.7335833
34	0	10.0187250	10.7312038	49	0	10.0376129	10.7336689
34	30	10.0193521	10.7312825	49	30	10.0382452	10.7337548
35	0	10.0199794	10.7313614	50	0	10.0388777	10.7338409
35	30	10.0206068	10.7314406	50	30	10.0395103	10.7339273
36	0	10.0212345	10.7315201	51	0	10.0401432	10.7340140
36	30	10.0218622	10.7315998	51	30	10.0407761	10.7341009
37	0	10.0224902	10.7316798	52	0	10.0414093	10.7341881
37	30	10.0231183	10.7317599	52	30	10.0420427	10.7342755
38	0	10.0237466	10.7318402	53	0	10.0426762	10.7343630
38	30	10.0243751	10.7319209	53	30	10 0433100	10.7344508
39	0	10.0250037	10.7320017	54	0	10.0439440	10.7345388
39	30	10.0256326	10.7320828	54	30	10.0445781	10.7346273
40	0	10.0262616	10.7321640	55	0	10.0452123	10.7347159
40	30	10.0268907	10.7322457	55	30	10.0458468	10.7348048
41	0	10.0275200	10.7324276	56	0	10.0464814	10.7348938
41	30	10.0281495	10.7324095	56	30	10.0471162	10.7349832
42	0	10.0287793	10.7324917	57	0	10 0477512	10.7350728
42	30	10.0294091	10.7325743	57	30	10.0483865	10.7351627
43	0	10.0300391	10.7326571	58	0	10.0490219	10.7352527
43	30	10.0306693	10.7327401	58	30	10.0496575	10.7353431
44	0	10.0312997	10 7328233	59	0	10.0502932	10.7354336
44	30	10.0319302	10.7329068	59	30	10.0509291	10.7355245
45	0	10.0325609	10.7329905	60	0	10.0515652	10.7356156

34 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	10.0515652	10.7356156	15	0	10.0707383	10.7384667
0	30	10.0522016	10.7357070	15	30	10.0713804	10.7385657
1	0	10.0528381	10.7357985	16	0	10 0720227	10.7386651
1	30	10.0534748	10.7358904	16	30	10.0726652	10.7387646
2	0	10.0541117	10.7359825	17	0	10 0733080	10.7388644
2	30	10.0547488	10.7360748	17	30	10.0739509	10.7389645
3	0	10.0553861	10.7361673	18	0	10.0745941	10.7390649
3	30	10.0560235	10.7362603	18	30	10.0752374	10.7391656
4	0	10.0566611	10.7363535	19	0	10.0758809	10.7392665
4	30	10.0572990	10.7364468	19	30	10.0765246	10.7393676
5	0	10.0579371	10.7365403	20	0	10.0771686	10.7394690
5	30	10.0585752	10.7366342	20	30	10.0778128	10.7395708
6	0	10.0592136	10.7367284	21	0	10.0784571	10.7396727
6	30	10.0598522	10.7368228	21	30	10.0791017	10.7397749
7	0	10.0604910	10.7369174	22	0	10.0797465	10.7398773
7	30	10.0611299	10.7370123	22	30	10.0803915	10.7399801
8	0	10.0617691	10.7371075	23	0	10.0810367	10.7400831
8	30	10.0624085	10.7372029	23	30	10.0816821	10.7401865
9	0	10.0630481	10.7372985	24	0	10.0823276	10.7402900
9	30	10.0636879	10.7373945	24	30	10.0829735	10.7403939
10	0	10.0643278	10.7374906	25	0	10.0836195	10.7404979
10	30	10.0649679	10.7375871	25	30	10.0842657	10.7406023
11	0	10.0656082	10.7376838	26	0	10.0849122	10.7407070
11	30	10.0662488	10.7377808	26	30	10.0855587	10.7408119
12	0	10.0668896	10.7378780	27	0	10.0862056	10.7409172
12	30	10.0675305	10.7379755	27	30	10.0868526	10.7410226
13	0	10.0681716	10.7380732	28	0	10.0874999	10.7411283
13	30	10.0688130	10.7381712	28	30	10.0881474	10.7412344
14	0	10.0694546	10.7382694	29	0	10.0887951	10.7413407
14	30	10.0700963	10.7383679	29	30	10.0894430	10.7414473
15	0	10.0707383	10.7384667	30	0	10.0900912	10.7415542

34 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.0900912	10.7415540	45	0	10.1096365	10.7448881
30	30	10.0907395	10.7416611	45	30	10.1102916	10.7450036
31	0	10.0913881	10.7417685	46	0	10.1109469	10.7451193
31	30	10.0920369	10.7418761	46	30	10.1116023	10.7452355
32	0	10 0926859	10.7419839	47	0	10.1122579	10.7453519
32	30	10 0933351	10.7420921	47	30	10.1129138	10.7454686
33	0	10.0939846	10.7422006	48	0	10.1135699	10.7455855
33	30	10.0946342	10.7423094	48	30	10.1142263	10.7457027
34	0	10.0952840	10.7424184	49	0	10.1148830	10.7458202
34	30	10.0959340	10.7425278	49	30	10.1155397	10.7459381
35	0	10.0965842	10.7426374	50	0	10.1161967	10.7460563
35	30	10.0972348	10.7427472	50	30	10.1168541	10.7461747
36	0	10.0978856	10.7428572	51	0	10.1175111	10.7462933
36	30	10.0985365	10.7429677	51	30	10.1181694	10.7464124
37	0	10.0991877	10.7430785	52	0	10.1188273	10.7465317
37	30	10.0998390	10.7431894	52	30	10.1194855	10.7466513
38	0	10.1004907	10.7433007	53	0	10.1201440	10.7467712
38	30	10.1011425	10.7434123	53	30	10.1208027	10.7468913
39	0	10.1017945	10.7435241	54	0	10.1214617	10.7470117
39	30	10.1024468	10.7436362	54	30	10.1221209	10.7471325
40	0	10.1030993	10.7437485	55	0	10.1227803	10.7472535
40	30	10.1037520	10.7438612	55	30	10.1234400	10.7473750
41	0	10.1044050	10.7439742	56	0	10.1240998	10.7474966
41	30	10.1050581	10.7440875	56	30	10.1247600	10.7476186
42	0	10.1057114	10.7442010	57	0	10.1254204	10.7477408
42	30	10.1063650	10.7443148	57	30	10.1260810	10.7478634
43	0	10.1070189	10.7444289	58	0	10.1267418	10.7479862
43	30	10.1076730	10.7445432	58	30	10.1272029	10.7481093
44	0	10.1083274	10.7446578	59	0	10.1280643	10.7482327
44	30	10 1089818	10.7447728	59	30	10.1287259	10.7483565
45	0	10.1096365	10.7448881	60	0	10.1293877	10.7484805

35 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	10.1293877	10.7484805	15	0	10.1493585	10.7523441
0	30	10.1300497	10.7486049	15	30	10.1500281	10.7524777
1	0	10.1307120	10.7487296	16	0	10.1506980	10.7526116
1	30	10.1313746	10.7488546	16	30	10.1513682	10.7527458
2	0	10.1320374	10.7489798	17	0	10.1520387	10.7528803
2	30	10.1327005	10.7491053	17	30	10.1527094	10.7530152
3	0	10.1333639	10.7492311	18	0	10.1533804	10.7531504
3	30	10.1340273	10.7493573	18	30	10.1540516	10.7532868
4	0	10.1346911	10.7494839	19	0	10.1547230	10.7534218
4	30	10.1353552	10.7496106	19	30	10.1553948	10.7535580
5	0	10.1360196	10.7497376	20	0	10.1560669	10.7536945
5	30	10.1366840	10.7498650	20	30	10.1567391	10.7538313
6	0	10.1373488	10.7499928	21	0	10.1574116	10.7539684
6	30	10.1380138	10.7501208	21	30	10.1580845	10.7541059
7	0	10.1386791	10.7502491	22	0	10.1587576	10.7542436
7	30	10.1393447	10.7503777	22	30	10.1594309	10.7543817
8	0	10.1400105	10.7505065	23	0	10.1601045	10.7545201
8	30	10.1406766	10.7506358	23	30	10.1607785	10.7546589
9	0	10.1413429	10.7507653	24	0	10.1614527	10.7547979
9	30	10.1420194	10.7508852	24	30	10.1621271	10.7549373
10	0	10.1426762	10.7510254	25	0	10 1628018	10.7550770
10	30	10.1433433	10.7511559	25	30	10.1634768	10.7552170
11	0	10.1440106	10.7512866	26	0	10.1641521	10.7553573
11	30	10.1446781	10.7514177	26	30	10.1648277	10.7554981
12	0	10.1453460	10.7515492	27	0	10.1655035	10.7556391
12	30	10.1460141	10.7516809	27	30	10.1661796	10.7557804
13	0	10.1466825	10.7518129	28	0	10.1668560	10.7559220
13	30	10.1473510	10.7519452	28	30	10.1675326	10.7560640
14	0	10.1480199	10.7520779	29	0	10.1682096	10.7562064
14	30	10.1486891	10.7522109	29	30	10.1688867	10.7563491
15	0	10.1493585	10 7523441	30	0	10.1695641	10.7564921

35 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.1695641	10.7564921	45	0	10.1900209	10.7609393
30	30	10.1702419	10.7566355	45	30	10.1907073	10.7610929
31	0	10.1709199	10.7567791	46	0	10.1913941	10.7612469
31	30	10.1715982	10.7569232	46	30	10.1920810	10.7614012
32	0	10.1722768	10.7570676	47	0	10.1927683	10.7615559
32	30	10.1729556	10.7572122	47	30	10.1934559	10.7617109
33	0	10.1736348	10.7573572	48	0	10.1941438	10.7618662
33	30	10.1743143	10.7575025	48	30	10.1948321	10.7620119
34	0	10.1749941	10.7576481	49	0	10.1955206	10.7621778
34	30	10.1756740	10.7577942	49	30	10.1962094	10.7623342
35	0	10.1763542	10 7579406	50	0	10.1968986	10.7624910
35	30	10.1770349	10.7580873	50	30	10.1975880	10.7626482
36	0	10.1777158	10 7582342	51	0	10.1982777	10.7628057
36	30	10.1783969	10.7583817	51	30	10.1989677	10.7629635
37	0	10.1790783	10.7585295	52	0	10.1996581	10.7631217
37	30	10.1797600	10.7586774	52	30	10.2003488	10.7632802
38	0	10.1804421	10.7588257	53	0	10.2010398	10.7634390
38	30	10.1811244	10.7589746	53	30	10.2017310	10.7635984
39	0	10 1818069	10.7591237	54	0	10.2024225	10.7637581
39	30	10.1824898	10.7592730	54	30	10.2031144	10.7639180
40	0	10.1831731	10.7594227	55	0	10.2038067	10.7640783
40	30	10.1838565	10.7595729	55	30	10.2044992	10.7642390
41	0	10.1845402	10 7597234	56	0	10.2051921	10.7644001
41	30	10.1852242	10.7598742	56	30	10.2058852	10.7645616
42	0	10.1859185	10.7600253	57	0	10.2065786	10.7647234
42	30	10.1865932	10.7601768	57	30	10.2072724	10.7648856
43	0	10.1872782	10.7603286	58	0	10.2079665	10.7650481
43	30	10.1879634	10.7604808	58	30	10.2086609	10.7652109
44	0	10.1886489	10.7606333	59	0	10.2093557	10.7653741
44	30	10.1893348	10.7607862	59	30	10.2100507	10.7655379
45	0	10.1900209	10.7609393	60	0	10 2107460	10 7657020

36 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	10.2107460	10.7657020	15	0	10.2317585	10.7707969
0	30	10.2114417	10.7658663	15	30	10.2324641	10.7709727
1	0	10.2121378	10.7660310	16	0	10.2331700	10.7711488
1	30	10.2128331	10.7661971	16	30	10.2338764	10.7713254
2	0	10.2135307	10.7663615	17	0	10.2345830	10.7715022
2	30	10.2142277	10.7665275	17	30	10.2352900	10.7716796
3	0	10.2149249	10.7666937	18	0	10.2359973	10.7718573
3	30	10.2156225	10.7668603	18	30	10.2367049	10.7720355
4	0	10.2163205	10.7670273	19	0	10.2374129	10.7722141
4	30	10.2170187	10.7671947	19	30	10.2381212	10.7723930
5	0	10.2177172	10.7673624	20	0	10.2388300	10.7725724
5	30	10.2184161	10.7675305	20	30	10.2395390	10.7727520
6	0	10.2191154	10.7676990	21	0	10.2402485	10.7729321
6	30	10.2198150	10.7678678	21	30	10.2409582	10.7731126
7	0	10.2205150	10.7680370	22	0	10 2416684	10.7732936
7	30	10.2212152	10.7682066	22	30	10.2423789	10.7734749
8	0	10.2219158	10.7683766	23	0	10.2430897	10.7736565
8	30	10.2226166	10.7685470	23	30	10.2438009	10.7738387
9	0	10.2233178	10.7687178	24	0	10.2445124	10.7740212
9	30	10.2240193	10.7688889	24	30	10.2452243	10.7742041
10	0	10.2247212	10.7690604	25	0	10.2459366	10.7743874
10	30	10.2254234	10.7692324	25	30	10.2466492	10.7745712
11	0	10.2261259	10.7694047	26	0	10.2473621	10.7747553
11	30	10 2268288	10.7695774	26	30	10.2480753	10.7749399
12	0	10.2275320	10.7697504	27	0	10.2487890	10.7751250
12	30	10.2282356	10.7699238	27	30	10.2495031	10.7753103
13	0	10.2289396	10.7700976	28	0	10.2502175	10.7754959
13	30	10.2296438	10.7702718	28	30	10.2509322	10.7756822
14	0	10.2303484	10.7704464	29	0	10.2516473	10.7758689
14	30	10.2310533	10.7706215	29	30	10 2523628	10.7760558
15	0	10.2317585	10.7707969	30	0	10.2530788	10.7762432

36 DEGREES.

Minutes	Seconds	$x^3 - bx = 2a$	$bx - x^3 = 2a$	Minutes	Seconds	$x^3 - bx = 2a$	$bx - x^3 = 2a$
30	0	10.2530788	10.7762432	45	0	10.2747288	10.7820616
30	30	10.2537950	10.7764310	45	30	10.2754563	10.7822623
31	0	10.2545116	10.7766192	46	0	10.2761842	10.7824634
31	30	10.2552285	10.7768079	46	30	10.2769127	10.7826649
32	0	10.2559458	10.7769970	47	0	10.2776415	10.7828667
32	30	10.2566635	10.7771865	47	30	10.2783707	10.7830691
33	0	10.2573816	10.7773764	48	0	10.2791003	10.7832719
33	30	10.2581000	10.7775668	48	30	10.2798302	10.7834752
34	0	10.2588188	10.7777576	49	0	10.2805606	10.7836790
34	30	10.2595380	10.7779488	49	30	10.2812915	10.7838831
35	0	10.2602575	10.7781403	50	0	10.2820228	10.7840876
35	30	10.2609775	10.7783323	50	30	10.2827543	10.7842927
36	0	10.2616979	10.7785247	51	0	10.2834862	10.7844982
36	30	10.2624186	10.7787176	51	30	10.2842186	10.7847042
37	0	10.2631396	10.7789108	52	0	10.2849514	10.7849106
37	30	10.2638610	10.7791046	52	30	10.2856846	10.7851174
38	0	10.2645828	10.7792988	53	0	10.2864183	10.7853247
38	30	10.2653049	10.7794933	53	30	10.2871523	10.7855325
39	0	10.2660275	10.7796883	54	0	10.2878867	10.7857407
39	30	10.2667505	10.7798837	54	30	10.2886216	10.7859494
40	0	10.2674739	10.7800795	55	0	10.2893569	10.7861585
40	30	10 2681976	10.7802758	55	30	10.2900926	10.7863680
41	0	10.2689217	10.7804725	56	0	10.2908287	10.7865779
41	30	10.2696462	10.7806696	56	30	10.2915652	10.7867884
42	0	10.2703712	10.7808672	57	0	10.2923022	10.7869994
42	30	10.2710964	10.7810652	57	30	10.2930394	10.7872108
43	0	10 2718220	10.7812636	58	0	10.2937771	10.7874227
43	30	10.2725481	10.7814625	58	30	10.2945153	10.7876351
44	0	10.2732746	10 7816618	59	0	10.2952539	10.7878479
44	30	10.2740015	10.7818615	59	30	10.2959929	10.7880611
45	0	10.2747288	10.7820616	60	0	10.2967324	10.7882748

37 DEGREES.

Minutes	Seconds	$x^3 - bx = 2$	$bx - x^3 = 2$	Minutes	Seconds	$x^3 - bx = 2$	$bx - x^3 = 2$
0	0	10.2967324	10.7882748	15	0	10.3191101	10.7949073
0	30	10.2974722	10.7884890	15	30	10.3198691	10.7951359
1	0	10.2982124	10.7887036	16	0	10.3206226	10.7953650
1	30	10.2989531	10.7889187	16	30	10.3213764	10.7955946
2	0	10.2996943	10.7891343	17	0	10.3221308	10.7958248
2	30	10.3004358	10.7893504	17	30	10.3228856	10.7960554
3	0	10.3011778	10.7895670	18	0	10.3236409	10 7962865
3	30	10.3019202	10.7897840	18	30	10.3243967	10.7965181
4	0	10.3026630	10.7900014	19	0	10.3251529	10.7967501
4	30	10.3034063	10.7902193	19	30	10.3259096	10.7969828
5	0	10.3041501	10 7904377	20	0	10.3266667	10.7972159
5	30	10.3048942	10.7906566	20	30	10.3274242	10.7974496
6	0	10.3056387	10.7908759	21	0	10.3281822	10.7976838
6	30	10.3063838	10.7910958	21	30	10.3289408	10.7979184
7	0	10.3071292	10.7913160	22	0	10.3296999	10.7981535
7	30	10.3078751	10.7915369	22	30	10.3304593	10.7983893
8	0	10.3086214	10.7917582	23	0	10.3312192	10.7986256
8	30	10.3093680	10.7919800	23	30	10.3319796	10.7988622
9	0	10.3101151	10.7922023	24	0	10.3327406	10.7990994
9	30	10.3108628	10.7924250	24	30	10.3335019	10.7993371
10	0	10.3116110	10.7926482	25	0	10.3342638	10.7995754
10	30	10 3123595	10.7928719	25	30	10.3350260	10.7998142
11	0	10.3131084	10.7930960	26	0	10.3357887	10.8000535
11	30	10.3138578	10.7933208	26	30	10.3365521	10.8002933
12	0	10.3146076	10.7935460	27	0	10.3373159	10.8005335
12	30	10 3153579	10.7937717	27	30	10.3380801	10.8007745
13	0	10.3161086	10.7939978	28	0	10.3388447	10.8010159
13	30	10.3168598	10.7942244	28	30	10.3396100	10.8012578
14	0	10.3176115	10.7944515	29	0	10.3403757	10 8015001
14	30	10.3183636	10.7946792	29	30	10.3411419	10.8017431
15	0	10 3191161	10.7949073	30	0	10.3419085	10.8019865

37 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.3419085	10.8019865	45	0	10.3651411	10.8095427
30	30	10.3426756	10.8022306	45	30	10.3659235	10.8098033
31	0	10.3434432	10.8024752	46	0	10.3667064	10.8100644
31	30	10.3442113	10.8027203	46	30	10.3674898	10.8103260
32	0	10.3449799	10.8029659	47	0	10.3682738	10.8105882
32	30	10.3457491	10.8032121	47	30	10.3690583	10.8108509
33	0	10.3465187	10.8034587	48	0	10.3698434	10.8111142
33	30	10.3472888	10.8037060	48	30	10.3706290	10.8113780
34	0	10.3481593	10.8038537	49	0	10.3714152	10.8116424
34	30	10.3489304	10.8041020	49	30	10.3722019	10.8119075
35	0	10.3496021	10.8044509	50	0	10.3729891	10.8121731
35	30	10.3503742	10.8057002	50	30	10.3737768	10.8124394
36	0	10.3511469	10.8049501	51	0	10.3745650	10.8127062
36	30	10.3519199	10.8052005	51	30	10.3753538	10.8129736
37	0	10.3526935	10.8054515	52	0	10.3761432	10.8132416
37	30	10.3534677	10.8057031	52	30	10.3769331	10.8135101
38	0	10.3542423	10.8059551	53	0	10.3777236	10.8137792
38	30	10.3550174	10.8062078	53	30	10.3785147	10.8140489
39	0	10.3557931	10.8064611	54	0	10.3793063	10.8143191
39	30	10.3565692	10.8067148	54	30	10.3800984	10.8145900
40	0	10.3573459	10.8069691	55	0	10.3808911	10.8148615
40	30	10.3581231	10.8072239	55	30	10.3816843	10.8151337
41	0	10.3589009	10.8074793	56	0	10.3824780	10.8154064
41	30	10.3596791	10.8077353	56	30	10.3832724	10.8156796
42	0	10.3604578	10.8079918	57	0	10.3840674	10.8159534
42	30	10.3612370	10.8082490	57	30	10.3848628	10.8162278
43	0	10.3620167	10.8085067	58	0	10.3856589	10.8165029
43	30	10.3627970	10.8087648	58	30	10.3864554	10.8167786
44	0	10.3635779	10.8090235	59	0	10.3872525	10.8170549
44	30	10.3643593	10.8092829	59	30	10.3880503	10.8173319
45	0	10.3651411	10.8095427	60	0	10.3888485	10.8176093

38 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	10.3888485	10.8176093	15	0	10.4130695	10.826224
0	30	10.3896474	10.8178874	15	30	10.4138861	10.826524
1	0	10.3904469	10.8181661	16	0	10.4147034	10.826815
1	30	10.3912470	10.8184454	16	30	10.4155213	10.827116
2	0	10.3920476	10.8187252	17	0	10.4163399	10.827415
2	30	10.3928488	10.8190058	17	30	10.4171591	10.827714
3	0	10.3936505	10.8192869	18	0	10.4179790	10.828015
3	30	10.3944527	10.8195687	18	30	10.4187994	10.828316
4	0	10.3952556	10.8198512	19	0	10.4196204	10.828617
4	30	10.3960591	10.8201341	19	30	10.4204421	10.828919
5	0	10.3968633	10.8204177	20	0	10.4212645	10.829222
5	30	10.3976678	10.8207020	20	30	10.4220874	10.829526
6	0	10.3984730	10.8209870	21	0	10.4229109	10.829830
6	30	10.3992788	10.8212724	21	30	10.4237351	10.830135
7	0	10.4000853	10.8215585	22	0	10.4245600	10.830441
7	30	10.4008923	10.8218453	22	30	10.4253855	10.830747
8	0	10.4016999	10.8221327	23	0	10.4262117	10.831054
8	30	10.4025081	10.8224207	23	30	10.4270385	10.831362
9	0	10.4033169	10.8227093	24	0	10.4278659	10.831671
9	30	10.4041262	10.8229986	24	30	10.4286940	10.831980
10	0	10.4049362	10.8232886	25	0	10.4295227	10.831289
10	30	10.4057468	10.8235792	25	30	10.4303521	10.832600
11	0	10.4065580	10.8238704	26	0	10.4311822	10.832911
11	30	10.4073698	10.8241622	26	30	10.4320129	10.833223
12	0	10.4081822	10.8244546	27	0	10.4328442	10.833535
12	30	10.4089952	10.8247478	27	30	10.4336762	10.833849
13	0	10.4098088	10.8250416	28	0	10.4345089	10.834162
13	30	10.4106230	10.8253360	28	30	10.4353423	10.834477
14	0	10.4114379	10.8256311	29	0	10.4361763	10.834792
14	30	10.4122533	10.8259267	29	30	10.4370110	10.835108
15	0	10.4130695	10.8262231	30	0	10.4378463	10.835425

38 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.4378463	10.8354255	45	0	10.4632268	10.8452628
30	30	10.4386823	10.8357429	45	30	10.4640837	10.8456023
31	0	10.4395190	10.8360610	46	0	10.4649414	10.8459426
31	30	10.4403563	10.8363799	46	30	10.4657999	10.8462835
32	0	10.4411943	10.8366995	47	0	10.4666592	10.8466252
32	30	10 4420331	10.8370197	47	30	10.4675191	10.8469677
33	0	10.4428725	10.8373405	48	0	10.4683798	10.8473110
33	30	10.4437126	10.8376622	48	30	10.4692412	10.8476550
34	0	10.4445534	10.8379846	49	0	10.4701034	10.8479998
34	30	10.4453948	10.8383078	49	30	10.4709663	10.8483455
35	0	10.4462368	10.8386316	50	0	10.4718299	10.8486919
35	30	10.4470796	10 8389562	50	30	10.4726943	10.8490391
36	0	10.4479231	10.8392815	51	0	10.4735595	10.8493871
36	30	10.4487673	10.8396075	51	30	10.4744254	10.8497358
37	0	10.4496123	10.8399343	52	0	10.4752921	10.8500853
37	30	10.4504579	10.8402617	52	30	10.4761596	10.8504356
38	0	10.4513042	10.8405898	53	0	10.4770279	10.8507867
38	30	10.4521512	10.8409188	53	30	10.4778968	10.8511386
39	0	10.4529989	10.8412485	54	0	10.4787665	10.8514913
39	30	10.4538473	10.8415789	54	30	10.4796370	10.8518448
40	0	10.4546964	10.8419100	55	0	10.4805083	10.8521991
40	30	10.4555462	10.8422420	55	30	10.4813803	10.8525543
41	0	10.4563967	10.8425747	56	0	10.4822531	10.8529103
41	30	10.4572479	10.8429081	56	30	10.4831267	10.8532671
42	0	10.4580998	10.8432422	57	0	10.4840010	10.8536246
42	30	10.4589525	10.8435771	57	30	10.4848762	10.8539830
43	0	10.4598059	10.8439127	58	0	10.4857522	10.8543422
43	30	10.4606600	10.8442492	58	30	10.4866289	10.8547021
44	0	10.4615148	10 8445864	59	0	10.4875065	10 8550629
44	30	10 4623704	10.8449242	59	30	10.4883848	10 8554246
45	0	10.4632268	10.8452628	60	0	10.4892630	10.8557871

39 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	10.4892639	10.8557871	15	0	10.5160180	10.8670568
0	30	10.4901438	10.8561504	15	30	10.5169229	10.8674461
1	0	10.4910245	10.8565145	16	0	10.5178287	10.8678363
1	30	10.4919060	10.8568794	16	30	10.5187353	10.8682273
2	0	10.4927884	10.8572452	17	0	10.5196429	10.8686193
2	30	10.4936714	10.8576118	17	30	10.5205513	10.8690121
3	0	10.4945553	10.8579793	18	0	10.5214607	10.8694059
3	30	10.4954401	10.8583477	18	30	10.5223709	10.8698005
4	0	10.4963256	10.8587168	19	0	10.5232819	10.8701963
4	30	10.4972119	10.8590869	19	30	10.5241939	10.8705929
5	0	10.4980990	10.8594578	20	0	10.5251068	10.8709904
5	30	10.4989870	10.8598294	20	30	10.5260205	10.8713887
6	0	10.4998759	10.8602019	21	0	10.5269353	10.8717881
6	30	10.5007656	10.8605754	21	30	10.5278508	10.8721884
7	0	10.5016560	10.8609496	22	0	10.5287672	10.8725896
7	30	10.5025473	10.8613247	22	30	10.5296846	10.8729918
8	0	10.5034395	10.8617007	23	0	10.5306029	10.8733949
8	30	10.5043324	10.8620776	23	30	10.5315221	10.8737989
9	0	10.5052262	10 8624554	24	0	10.5324423	10.8742039
9	30	10.5061208	10.8628340	24	30	10.5333633	10.8746099
10	0	10.5070163	10.8632135	25	0	10 5342853	10.8750169
10	30	10.5079126	10 8635938	25	30	10.5352082	10.8754246
11	0	10.5088098	10.8639750	26	0	10.5361322	10.8758334
11	30	10.5097078	10.8643572	26	30	10.5370569	10.8762431
12	0	10.5106066	10.8647402	27	0	10.5379827	10.8766539
12	30	10.5115063	10.8651241	27	30	10.5389092	10.8770656
13	0	10.5124069	10.8655089	28	0	10.5398368	10.8774784
13	30	10.5133084	10.8658946	28	30	10.5407654	10.8778920
14	0	10.5142107	10.8662811	29	0	10.5416949	10.8783065
14	30	10.5151139	10.8666685	29	30	10.5426253	10.8787221
15	0	10.5160180	10.8670568	30	0	10.5435567	10.8791387

39 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.5435567	10.8791387	45	0	10.5719573	10.8921089
30	30	10.5444890	10.8795564	45	30	10.5729199	10.8925575
31	0	10.5454222	10.8799750	46	0	10.5738835	10.8930071
31	30	10.5463565	10.8803945	46	30	10.5748481	10.8934579
32	0	10.5472918	10.8808150	47	0	10.5758138	10.8939098
32	30	10 5482280	10.8812366	47	30	10.5767806	10.8943628
33	0	10.5491642	10.8816602	48	0	10.5777485	10.8948169
33	30	10.5501023	10 8820837	48	30	10.5787174	10.8952720
34	0	10.5510425	10.8825073	49	0	10.5796875	10.8957283
34	30	10.5519826	10.8829328	49	30	10.5806585	10.8961857
35	0	10.5529237	10 8833593	50	0	10.5816307	10.8966443
35	30	10.5538658	10.8837870	50	30	10.5826039	10.8971039
36	0	10.5548088	10 8842156	51	0	10.5835783	10.8975647
36	30	10.5557529	10.8846453	51	30	10.5845537	10.8980265
37	0	10.5566979	10.8850759	52	0	10.5855303	10.8984895
37	30	10.5576440	10.8855076	52	30	10.5865080	10.8989536
38	0	10.5586911	10.8859403	53	0	10.5874868	10.8994188
38	30	10.5595391	10.8863741	53	30	10.5884667	10.8998853
39	0	10 5604882	10.8868090	54	0	10.5894477	10.9003529
39	30	10.5614383	10.8872449	54	30	10.5904298	10.9008216
40	0	10.5623894	10.8876818	55	0	10.5914131	10.9012915
40	30	10.5633415	10.8881197	55	30	10.5923975	10.9017625
41	0	10.5642947	10.8885587	56	0	10.5933830	10.9022346
41	30	10.5652489	10.8889987	56	30	10.5943696	10.9027080
42	0	10.5662042	10.8894398	57	0	10.5953573	10.9031825
42	30	10.5671604	10.8898820	57	30	10.5963463	10.9036581
43	0	10.5681176	10 8903252	58	0	10.5973365	10.9041349
43	30	10.5690760	10.8907696	58	30	10.5983277	10.9046129
44	0	10.5700353	10.8912149	59	0	10.5993201	10.9050921
44	30	10.5709958	10.8916614	59	30	10.6003136	10.9055726
45	0	10.5719573	10.8921080	60	0	10 6013082	10.9060542

40 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2$	$bx - x^3 = 2c$
0	0	10.6013082	10.9060542	15	0	10.6317115	10.9210755
0	30	10.6023042	10.9065370	15	30	10.6327444	10.9215960
1	0	10.6033013	10.9070209	16	0	10.6337786	10.9221178
1	30	10.6042995	10.9075061	16	30	10.6348141	10.9226411
2	0	10.6052989	10.9079925	17	0	10.6358509	10.9231657
2	30	10.6062994	10.9084800	17	30	10.6368890	10.9236916
3	0	10.6073012	10.9089688	18	0	10.6379284	10.9242188
3	30	10.6083042	10.9094588	18	30	10.6389692	10.9247474
4	0	10.6093084	10.9099500	19	0	10.6400114	10.9252764
4	30	10.6103138	10 9104426	19	30	10.6410548	10.9258086
5	0	10.6113203	10.9109363	20	0	10.6420997	10 9263413
5	30	10.6123281	10.9114313	20	30	10.6431458	10.9268754
6	0	10.6133370	10.9119274	21	0	10.6441932	10.9274108
6	30	10.6143473	10.9124249	21	30	10.6452421	10.9279477
7	0	10.6153587	10.9129235	22	0	10 6462923	10.9284859
7	30	10.6163714	10.9134234	22	30	10.6473439	10.9290255
8	0	10.6173853	10.9139245	23	0	10.6483968	10.9295664
8	30	10.6184004	10.9144270	23	30	10.6494512	10.9301088
9	0	10.6194168	10 9149308	24	0	10.6505069	10.9306525
9	30	10.6204343	10.9154357	24	30	10.6515640	10.9311978
10	0	10.6214532	10.9159420	25	0	10.6526225	10.9317445
10	30	10.6224733	10.9164495	25	30	10.6536824	10.9322924
11	0	10.6234947	10.9169583	26	0	10.6547438	10.9328418
11	30	10.6245174	10.9174684	26	30	10.6558065	10.9333927
12	0	10.6255413	10.9179797	27	0	10.6568706	10.9339450
12	30	10.6265664	10.9184924	27	30	10.6579361	10.9344989
13	0	10.6275928	10.9190064	28	0	10.6590030	10.9350542
13	30	10.6286205	10.9195217	28	30	10.6600715	10.9356109
14	0	10.6296495	10.9200383	29	0	10.6611413	10.9361689
14	30	10.6306799	10.9205563	29	30	10 6622126	10.9367286
15	0	10.6317115	10.9210755	30	0	10.6632853	10.9372897

40 DEGREES.

Minutes	Seconds	$x^3 - bx = 2.$	$bx - x^3 = 2$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.6632853	10 9372897	45	0	10.6961682	10.9548342
30	30	10.6643595	10.9378523	45	30	10.6972886	10.9554438
31	0	10.6654351	10.9384163	46	0	10.6984106	10.9560550
31	30	10.6665122	10.9389818	46	30	10.6995344	10.9566678
32	0	10.6675908	10.9395488	47	0	10.7006599	10.9572823
32	30	10.6686708	10.9401174	47	30	10.7017870	10.9578986
33	0	10.6697522	10.9406874	48	0	10.7029157	10.9585165
33	30	10.6708353	10.9412589	48	30	10.7040461	10.9591361
34	0	10.6719199	10.9418319	49	0	10.7051782	10.9597574
34	30	10.6730058	10.9424064	49	30	10 7063119	10.9603805
35	0	10.6740933	10,9429825	50	0	10.7074473	10.9610053
35	30	10.6751824	10.9435602	50	30	10.7085845	10.9616317
36	0	10.6762729	10.9441393	51	0	10.7097235	10.9622599
36	30	10.6773649	10.9447201	51	30	10.7108640	10.9628898
37	0	10.6784584	10.9453024	52	0	10.7120063	10.9635215
37	30	10.6795534	10.9458862	52	30	10.7131504	10.9641550
38	0	10.6806500	10 9464716	53	0	10.7142961	10.9647901
38	30	10.6817483	10.9470585	53	30	10.7154437	10.9654271
39	0	10.6828481	10.9476469	54	0	10.7165930	10.9660658
39	30	10.6839494	10.9482370	54	30	10.7177441	10.9667063
40	0	10.6850523	10.9488387	55	0	10.7188969	10.9673485
40	30	10.6861567	10 9494221	55	30	10.7200514	10 9679926
41	0	10 6872626	10.9500170	56	0	10.7212077	10.9686385
41	30	10.6883702	10.9506134	56	30	10.7223659	10.9692863
42	0	10.6894794	10.9512114	57	0	10.7235258	10.9699358
42	30	10.6905902	10.9518112	57	30	10.7246875	10.9705871
43	0	10.6917025	10.9524125	58	0	10.7258511	10.9712403
43	30	10.6928165	10.9530155	58	30	10.7270165	10.9718953
44	0	10.6939321	10.9536201	59	0	10.7281837	10.9725521
44	30	10.6950493	10.9542263	59	30	10.7293528	10.9732108
45	0	10.6961682	10.9548342	60	0	10.7305237	10.9738713

41 DEGREES.

Minutes	Seconds	$x^3 - bx = a$	$bx - x^3 = a$	Minutes	Seconds	$x^3 - bx = a$	$bx - x^3 = a$
0	0	10.7305237	10.9738713	15	0	10.7665467	10.9945951
0	30	10.7316964	10.9745339	15	30	10.7677789	10.9953175
1	0	10.7328709	10.9751981	16	0	10.7690132	10.9960420
1	30	10.7340473	10 9758643	16	30	10.7702495	10.9967687
2	0	10.7352256	10.9765324	17	0	10.7714880	10.9974976
2	30	10.7364058	10.9772024	17	30	10.7727287	10.9982287
3	0	10.7375879	10.9778743	18	0	10.7739715	10.9989619
3	30	10.7387719	10.9785481	18	30	10.7752165	10.9996973
4	0	10.7399578	10.9792238	19	0	10.7764636	11.0004348
4	30	10.7411456	10.9799016	19	30	10.7777129	11.0011747
5	0	10.7423353	10 9805813	20	0	10.7789644	11.0019168
5	30	10.7435270	10.9812628	20	30	10.7802181	11.0026611
6	0	10.7447207	10.9819463	21	0	10.7814741	11.0034077
6	30	10.7459162	10.9826318	21	30	10.7827323	11.0041563
7	0	10.7471137	10.9833193	22	0	10.7839928	11.0049072
7	30	10.7483131	10.9840087	22	30	10.7852555	11.0056605
8	0	10.7495146	10.9847002	23	0	10.7865205	11.0064161
8	30	10.7507179	10.9853937	23	30	10.7877876	11.0071740
9	0	10.7519233	10.9860893	24	0	10.7890570	11 0079342
9	30	10.7531307	10.9867867	24	30	10.7903289	11.0086967
10	0	10.7543402	10.9874862	25	0	10.7916030	11 0094614
10	30	10.7555516	10.9881878	25	30	10.7928794	11 0102286
11	0	10.7567650	10.9888914	26	0	10.7941581	11.0109981
11	30	10.7579805	10.9895971	26	30	10.7954392	11.0117698
12	0	10.7591980	10.9903048	27	0	10.7967227	11.0125439
12	30	10 7604176	10.9910146	27	30	10.7980085	11.0133205
13	0	10.7616393	10.9917265	28	0	10.7992966	11 0140994
13	30	10.7628631	10.9924405	28	30	10.8005872	11.0148808
14	0	10 7640889	10.9931565	29	0	10.8018801	11 0156645
14	30	10.7653167	10.9938747	29	30	10.8031754	11.0164508
15	0	10 7665467	10.9945951	30	0	10.8044730	11 0172394

41 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.8044730	11.0172394	45	0	10.8445901	11.0420909
30	30	10.8057733	11.0180305	45	30	10.8459690	11.0429612
31	0	10.8070759	11.0188239	46	0	10.8473508	11.0438344
31	30	10.8083809	11.0196199	46	30	10.8487354	11.0447104
32	0	10.8096884	11.0204184	47	0	10.8501229	11.0455893
32	30	10.8109984	11.0212194	47	30	10.8515132	11.0464712
33	0	10.8123109	11.0220229	48	0	10.8529063	11.0473559
33	30	10.8136259	11.0228289	48	30	10.8543025	11 0482435
34	0	10.8149434	11.0236374	49	0	10.8557017	11.0491341
34	30	10.8162634	11.0244484	49	30	10.8571037	11.0500277
35	0	10.8175860	11.0252620	50	0	10.8585086	11.0509242
35	30	10.8189112	11.0260782	50	30	10.8599165	11.0518237
36	0	10.8202389	11.0268969	51	0	10.8613275	11.0527263
36	30	10.8215691	11.0277183	51	30	10.8627414	11.0536318
37	0	10.8229019	11.0285423	52	0	10.8641584	11.0545404
37	30	10.8242373	11.0293689	52	30	10.8655784	11.0554520
38	0	10.8255753	11.0301981	53	0	10.8670015	11.0563767
38	30	10.8269160	11.0310300	53	30	10.8684276	11.0572846
39	0	10.8282593	11.0318645	54	0	10.8698568	11.0582056
39	30	10.8296053	11.0327017	54	30	10.8712891	11.0591296
40	0	10.8309540	11.0335416	55	0	10.8727247	11 0600567
40	30	10.8323053	11.0343841	55	30	10.8741632	11.0609870
41	0	10.8336594	11.0352294	56	0	10.8756049	11.0619205
41	30	10.8350161	11.0360773	56	30	10.8770499	11.0628573
42	0	10.8363756	11.0369280	57	0	10 8784980	11.0637972
42	30	10.8377378	11.0377816	57	30	10.8799493	11.0647403
43	0	10.8391027	11.0386379	58	0	10.8814038	11.0656866
43	30	10.8404703	11.0394969	58	30	10.8828617	11.0666363
44	0	10.8418408	11 0403588	59	0	10.8843227	11.0675891
44	30	10.8432140	11.0412234	59	30	10.8857870	11.0685454
45	0	10.8445901	11.0420909	60	0	10.8872546	11.0695050

42 DEGREES.

Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$	Minutes	Seconds	$x^3-bx=2c$	$bx-x^3=2c$
0	0	10.8872546	11.0695050	15	0	10.9329161	11.0999301
0	30	10.8887256	11.0704678	15	30	10.9344953	11.1010033
1	0	10.8901999	11.0714339	16	0	10 9360802	11.1020786
1	30	10.8916776	11.0724036	16	30	10.9376681	11.1031589
2	0	10.8931585	11.0733765	17	0	10 9392601	11.1042433
2	30	10.8946429	11.0743529	17	30	10.9408562	11.1053318
3	0	10.8961308	11.0753328	18	0	10 9424563	11.1064243
3	30	10.8976220	11.0763160	18	30	10.9440606	11.1075210
4	0	10.8991167	11.0773027	19	0	10.9456689	11.1086217
4	30	10.9006149	11.0782929	19	30	10.9472814	11.1097268
5	0	10.9021166	11.0792866	20	0	10.9488980	11.1108360
5	30	10.9036219	11.0802839	20	30	10.9505190	11.1119494
6	0	10.9051306	11.0812846	21	0	10.9521442	11.1130670
6	30	10.9066429	11.0822891	21	30	10.9537735	11.1141889
7	0	10 9081587	11.0832971	22	0	10.9554072	11.1153152
7	30	10.9096782	11.0843086	22	30	10.9570452	11.1164458
8	0	10.9112013	11.0853237	23	0	10.9586875	11.1175807
8	30	10.9127280	11.0863426	23	30	10.9603344	11.1187200
9	0	10.9142583	11.0873651	24	0	10.9619856	11.1198636
9	30	10.9157924	11.0883914	24	30	10.9636412	11.1210118
0	0	10.9173301	11.0894213	25	0	10.9653012	11.1221644
0	30	10.9188716	11.0904550	25	30	10.9669656	11.1233216
1	0	10.9204168	11.0914924	26	0	10.9686346	11.1244834
1	30	10 9219658	11.0925336	26	30	10.9703082	11.1256496
2	0	10.9235186	11.0935786	27	0	10.9719863	11.1268203
2	30	10.9250743	11.0946283	27	30	10 9736691	11.1279957
3	0	10.9266357	11.0956801	28	0	10.9753566	11.1291758
3	30	10.9281999	11.0967367	28	30	10.9770486	11.1303606
4	0	10.9297681	11.0977973	29	0	10.9787453	11.1315501
4	30	10 9313401	11.0988617	29	30	10.9804469	11.1327443
5	0	10.9329161	11.0999301	30	0	10.9821532	11.1339432

42 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	10.9821532	11.1339432	45	0	11.0357268	11.1723048
30	30	10.9838642	11.1351470	45	30	11.0375984	11.1736696
31	0	10.9855801	11.1363557	46	0	11.0394752	11.1750402
31	30	10.9873008	11.1375692	46	30	11.0413593	11.1764169
32	0	10.9890265	11.1387877	47	0	11.0432489	11.1777997
32	30	10.9907570	11.1400110	47	30	11.0451440	11.1791880
33	0	10.9924926	11.1412394	48	0	11.0470464	11.1805836
33	30	10.9942331	11.1424727	48	30	11.0489546	11.1819848
34	0	10.9959786	11.1437110	49	0	11.0508690	11.1833922
34	30	10.9977293	11.1449545	49	30	11.0527895	11.1848061
35	0	10.9994848	11.1462032	50	0	11.0547164	11.1862264
35	30	11.0012457	11.1474569	50	30	11.0566497	11.1876529
36	0	11.0030117	11.1487157	51	0	11.0585895	11.1890859
36	30	11.0047829	11.1499799	51	30	11.0605358	11.1905254
37	0	11.0065593	11.1512493	52	0	11.0624887	11.1919715
37	30	11.0083411	11.1525239	52	30	11.0644482	11.1934242
38	0	11.0101282	11.1538038	53	0	11.0664143	11.1948835
38	30	11.0119205	11.1550891	53	30	11.0683870	11.1963496
39	0	11.0137183	11.1563799	54	0	11.0703665	11.1978225
39	30	11.0155215	11.1576761	54	30	11.0723528	11.1993022
40	0	11.0173302	11.1589778	55	0	11.0743459	11.2007887
40	30	11.0191444	11.1602850	55	30	11.0763461	11.2022821
41	0	11.0209642	11.1615978	56	0	11.0783533	11.2037825
41	30	11.0227895	11.1629161	56	30	11.0803674	11.2052900
42	0	11.0246205	11.1642401	57	0	11.0823886	11.2068046
42	30	11.0264571	11.1655697	57	30	11.0844170	11.2083264
43	0	11.0282995	11.1669051	58	0	11.0864525	11.2098553
43	30	11.0301476	11.1682464	58	30	11.0884953	11.2113915
44	0	11.0320014	11.1695934	59	0	11.0905455	11.2129351
44	30	11.0338612	11.1709462	59	30	11.0926031	11.2144861
45	0	11.0357268	11.1723048	60	0	11.0946681	11.2160445

43 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 =$	Minutes	Seconds	$x^3 + bx = 2c$	$rx - x^3 = 2c$
0	0	11.0946681	11.2160445	15	0	11.1604217	11.2666061
0	30	11.0967405	11.2176105	15	30	11.1627531	11.2684311
1	0	11.0988205	11.2191841	16	0	11.1650943	11.2702659
1	30	11.1009082	11.2207652	16	30	11.1674455	11.2721109
2	0	11.1030037	11.2223541	17	0	11.1698068	11.2739660
2	30	11.1051069	11.2239507	17	30	11.1721783	11.2758313
3	0	11.1072180	11.2255552	18	0	11.1745601	11.2777069
3	30	11.1093368	11.2271676	18	30	11.1769523	11.2795929
4	0	11.1114637	11.2287881	19	0	11.1793551	11.2814895
4	30	11.1135986	11.2304166	19	30	11.1817684	11.2833966
5	0	11.1157416	11.2320532	20	0	11.1841925	11.2853145
5	30	11.1178929	11.2336979	20	30	11.1866274	11.2872432
6	0	11.1200524	11.2353508	21	0	11.1890733	11.2891828
6	30	11.1222202	11.2370122	21	30	11.1915302	11.2911336
7	0	11.1243964	11.2386820	22	0	11.1939983	11.2930955
7	30	11.1265810	11.2403602	22	30	11.1964775	11.2950687
8	0	11.1287742	11.2420470	23	0	11.1989682	11.2970534
8	30	11.1309761	11.2437425	23	30	11.2014705	11.2990495
9	0	11.1331866	11.2454466	24	0	11.2039844	11.3010572
9	30	11.1354060	11.2471596	24	30	11.2065100	11.3030766
10	0	11.1376342	11.2488814	25	0	11.2090476	11.3051080
10	30	11.1398712	11.2506122	25	30	11.2115970	11.3071514
11	0	11.1421173	11.2523521	26	0	11.2141586	11.3092070
11	30	11.1443726	11.2541010	26	30	11.2167324	11.3112748
12	0	11.1466371	11.2558591	27	0	11.2193187	11.3133551
12	30	11.1489109	11.2576265	27	30	11.2219175	11.3154477
13	0	11.1511940	11.2594032	28	0	11.2245291	11.3175531
13	30	11.1534865	11.2611895	28	30	11.2271533	11.3196713
14	0	11.1557886	11.2629854	29	0	11.2297905	11.3218025
14	30	11.1581003	11.2647909	29	30	11.2324407	11.3239467
15	0	11.1604217	11.2666061	30	0	11.2351042	11.3261042

43 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	11.2351042	11.3261042	45	0	11.3219955	11.3978183
30	30	11.2377811	11.3282751	45	30	11.3251570	11.4004740
31	0	11.2404715	11.3304595	46	0	11.3283381	11.4031493
31	30	11.2431756	11.3326576	46	30	11.3315390	11.4058444
32	0	11.2458935	11.3348695	47	0	11.3347600	11.4085596
32	30	11.2486255	11.3370955	47	30	11.3380013	11.4112951
33	0	11.2513715	11.3393355	48	0	11.3412633	11.4140513
33	30	11.2541320	11.3415900	48	30	11.3445462	11.4168284
34	0	11.2569068	11.3438588	49	0	11.3478502	11.4196266
34	30	11.2596963	11.3461425	49	30	11.3511757	11.4224465
35	0	11.2625006	11.3484410	50	0	11.3545231	11.4252883
35	30	11.2653199	11.3507543	50	30	11.3578926	11.4281520
36	0	11.2681545	11.3530829	51	0	11.3612846	11.4310382
36	30	11.2710044	11.3554268	51	30	11.3646994	11.4339472
37	0	11.2738699	11.3577863	52	0	11.3681373	11.4368793
37	30	11.2767510	11.3601616	52	30	11.3715986	11.4398350
38	0	11.2796480	11.3625528	53	0	11.3750837	11.4428145
38	30	11.2825613	11.3649601	53	30	11.3785930	11.4458180
39	0	11.2854908	11.3673836	54	0	11.3821268	11.4488460
39	30	11.2884368	11.3698238	54	30	11.3856855	11.4518991
40	0	11.2913996	11.3722808	55	0	11.3892694	11.4549774
40	30	11.2943792	11.3747546	55	30	11.3928792	11.4580814
41	0	11.2973761	11.3772457	56	0	11.3965150	11.4612114
41	30	11.3003903	11.3797539	56	30	11.4001771	11.4643679
42	0	11.3034222	11.3822798	57	0	11.4038662	11.4675514
42	30	11.3064719	11.3848237	57	30	11.4075826	11.4707622
43	0	11.3095395	11.3873855	58	0	11.4113268	11.4740008
43	30	11.3126255	11.3899657	58	30	11.4150993	11.4772675
44	0	11.3157300	11.3925644	59	0	11.4189005	11.4805629
44	30	11.3188532	11.3951818	59	30	11.4227307	11.4838875
45	0	11.3219955	11.3978183	60	0	11.4265906	11.4872418

44 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
0	0	11.4265906	11 4872418	15	0	11.5591899	11.6046743
0	30	11.4304806	11.4906262	15	30	11.5642973	11.6092763
1	0	11.4344013	11.4940413	16	0	11.5694595	11.6139331
1	30	11.4383531	11.4974875	16	30	11.5746779	11.6186459
2	0	11.4423366	11.5009654	17	0	11.5799536	11.6234160
2	30	11.4463524	11.5044756	17	30	11.5852879	11.6282449
3	0	11.4504010	11.5080186	18	0	11.5906824	11.6331340
3	30	11.4544830	11.5115950	18	30	11.5961384	11.6380844
4	0	11.4585990	11.5152054	19	0	11.6016575	11.6430979
4	30	11.4627495	11.5188503	19	30	11.6072410	11.6481760
5	0	11.4669353	11.5225305	20	0	11.6128907	11.6533203
5	30	11.4711570	11.5262466	20	30	11.6186082	11.6585324
6	0	11.4754152	11.5299992	21	0	11.6243953	11.6638141
6	30	11.4797106	11.5337890	21	30	11.6302539	11.6691671
7	0	11.4840440	11.5376168	22	0	11.6361857	11.6745933
7	30	11.4884159	11.5414831	22	30	11.6421926	11.6800948
8	0	11.4928272	11.5453888	23	0	11.6482767	11.6856735
8	30	11.4972786	11.5493348	23	30	11.6544400	11.6913314
9	0	11.5017708	11 5533216	24	0	11.6606849	11.6970709
9	30	11.5063049	11.5573501	24	30	11.6670135	11.7028941
10	0	11.5108816	11.5614212	25	0	11 6734282	11.7088034
10	30	11.5155016	11.5655356	25	30	11.6799316	11.7148014
11	0	11.5201659	11.5696943	26	0	11.6865261	11.7208905
11	30	11.5248754	11.5738984	26	30	11.6932140	11.7270736
12	0	11.5296309	11.5781485	27	0	11.6999998	11.7333534
12	30	11.5344337	11.5824457	27	30	11.7068847	11.7397329
13	0	11.5392846	11.5867910	28	0	11.7138725	11.7462151
13	30	11.5441845	11.5911855	28	30	11.7209666	11.7528034
14	0	11.5491346	11.5956302	29	0	11.7281691	11.7595011
14	30	11.5541360	11.6001260	29	30	11.7354852	11.7663118
15	0	11.5591899	11 6046743	30	0	11.7429170	11.7732391

44 DEGREES.

Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2$	Minutes	Seconds	$x^3 - bx = 2c$	$bx - x^3 = 2c$
30	0	11.7429179	11.7732391	45	0	12.0515616	12.0667216
30	30	11.7504713	11.7802871	45	30	12.0665383	12.0811929
31	0	11.7581495	11.7874599	46	0	12.0820316	12.0961808
31	30	11.7659567	11.7947617	46	30	12.0980793	12.1117231
32	0	11.7738976	11.8021972	47	0	12.1147231	12.1278615
32	30	11.7819770	11.8097712	47	30	12.1320096	12.1446428
33	0	11.7902000	11.8174888	48	0	12.1499916	12.1621196
33	30	11.7985719	11.8253553	48	30	12.1687283	12.1803509
34	0	11.8070984	11.8333764	49	0	12.1882867	12.1994039
34	30	11.8157855	11.8415581	49	30	12 2087433	12 2193551
35	0	11.8246397	11.8499069	50	0	12.2301858	12.2402922
35	30	11.8336675	11.8584293	50	30	12.2527153	12.2623165
36	0	11.8428762	11.8671326	51	0	12.2764494	12.2855454
36	30	11.8522735	11.8760245	51	30	12.3015261	12.3101167
37	0	11.8618673	11.8851129	52	0	12.3281082	12.3361934
37	30	11.8716665	11.8944067	52	30	12.3563900	12.3639698
38	0	11.8816801	11.9039149	53	0	12.3866062	12.3936806
38	30	11.8919181	11.9136475	53	30	12.4190439	12.4256131
39	0	11.9023910	11.9236150	54	0	12.4540589	12.4601229
39	30	11.9131100	11.9338288	54	30	12.4921004	12.4976590
40	0	11.9240875	11.9443011	55	0	12.5337461	12.5387993
40	30	11.9353365	11 9550447	55	30	12.5797564	12 5843044
41	0	11 9468712	11.9660740	56	0	12.6311617	12.6352045
41	30	11.9587067	11.9774041	56	30	12.6894065	12.6929439
42	0	11.9708595	11.9890515	57	0	12.7566062	12.7596382
42	30	11.9833475	12.0010341	57	30	12.8360403	12.8385669
43	0	11 9961902	12.0133714	58	0	12.9332031	12.9352243
43	30	12.0094086	12 0260846	58	30	13 0583945	13.0599165
44	0	12.0230260	12.0391968	59	0	13.2347384	13.2357492
44	30	12.0370577	12.0527431	59	30	13.5360212	13.5365266
45	0	12.0515616	12.0667216	60	0	*Infinite.*	*Infinite.*